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ORIGINAL ARTICLES.

BLADDER DRAINAGE.*

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I propose taking this as my subject to-day and illustrating its practice by a case which will serve as material for comment. And before introducing the patient for examination there are a few points I would remind you of as bearing directly upon the cause and treatment of many bladder affections. In the first place, we must recognize that the power to completely empty and drain the bladder voluntarily of its contents is an act of nature which cannot be regularly deviated from without exposure to some risk of exciting disease. For it must be remembered that though normal urine under normal conditions may be said to be innocuous, it is capable by its confinement and decomposition of producing serious and disastrous effects upon the parts it may come in contact with, even of sufficient intensity to effect thereby its own escape.

And when we compare the male with the female urinary apparatus we shall I think conclude that the greater complexity of the mechanism of urination in the former instance as compared with the female carries with it a greater liability to an incomplete performance of the act and to those disorders which may emanate out of a continued imperfect evacuation of the bladder. For this reason alone the question of urine drainage and its substitution by artificial means oftener requires our consideration in the case of males than in the opposite sex.

The points I wish more particularly to ask your attention to before demonstrating the case are these:

First.—What disorders may follow upon a continued state of more or less incompleted urination, or, in other words, imperfect drainage of the bladder by natural efforts?

Second.—In what circumstances apart from various forms of catheterism may artificial drainage be advantageously employed and how may this be best effected?

Third.—What are the conditions which call for the regular use of catheter drainage?

These are interrogations of a practical character which constantly occur in practice; some differences of opinion will arise in responding to them, relative both to principle and detail, and thus such questions provide excellent material for consideration in connection more particularly with post-graduate work.

I will pass on to notice in the first place, and to ask you to recall from your own knowledge or observation, some of the diseases and disorders of the urinary

* A lecture delivered at the Polyclinic, London, September 17, 1902.

organs which are recognized as being caused or arising out of a chronic state of imperfect bladder emptying or drainage. They are by no means isolated instances or confined to one portion of this set of organs.

Their frequency is, however, in some degree relative to the time of life at which they occur. In male children and in early adult life disorders arising out of continually retained urine are comparatively rare, and this is in some measure due to the position the bladder occupies in respect to other pelvic organs. For in child life it may be said to be a supra- or extra-pubic organ, as it gradually descends as age proceeds in the direction of the true pelvis. Those of us who had much to do with lithotomy in children before crushing was so largely substituted will remember this relative to the direction of the knife on entering the bladder as compared with the plane of the adult viscus. Hence provision for natural urine drainage in the child is as perfect as possible. I recently said in my Hunterian lecture* that spasm would occasionally in these instances antagonize the natural gravitation and expulsion of the entire contents of the bladder and had thus been proved to be the cause of nocturnal enuresis. For this reason the occasional use of a catheter, even in such young subjects, may not only be necessary, but be completely successful, in arresting the complaint.

In older adults the planes of the posterior wall of the bladder and its outlet seldom undergo any alteration which will interfere with urine drainage, unless caused for instance by stricture or growth. In still more advanced life, when the sixties are reached or even before, there is a tendency, as I pointed out some years ago in connection with the earlier forms of prostatic obstruction, for some sinking of the posterior wall of the bladder to take place. This throws even the natural sized prostate into prominence, just as bending a piece of paper gives an angle or elevation to a portion of the surface which did not previously exist. Thus bladder drainage or emptying is rendered imperfect and the first stage of prostatic obstruction is reached in this simple but easily overlooked way. This, I believe, explains how about the sixtieth year of male life the incomplete emptying of the bladder is not uncommon though physical evidence of enlargement of the prostate may be still wanting.

Passing from these changes occurring at well-defined periods of life I will remind you of some disordered states directly or indirectly caused by retained and undrained urine. Apart from functional disturbances explained by mechanical reasons, such as frequent urination or incontinence from overflow, we have a number of more or less serious conditions which may be classified either as (1) intra-vesical or those happening within the urinary apparatus, and (2) extravesical or those principally in relation with the structures outside.

1. The intra-vesical states of disorder thus arising from retention include the various degrees of cystitis or inflammation of the bladder with suppuration and the exudation of considerable quantities of mucus caused by ammoniacal decomposition of sacs or otherwise, of retained urine. The extension of these conditions upwards into the ureters and the passages within the kidneys and the dilatation of these parts, and further the distortion of the bladder itself by the formation of trabeculæ, pouches and sacs, all of which may be caused by the retention of secretion which is either retained or discharged under the high muscular pressure of expulsion. Thus from the retention and decomposition of

* Hunterian Society of London, February 26, 1902.

urine may the bladder and urinary apparatus generally be assimilated with a chronic abscess.

In another class of cases the chronically unemptied and undrained bladder becomes liable from time to time to the formation of phosphatic stone. This is more especially the case where persons have previously suffered and been operated upon for other kinds of stone, such as the urates and oxalates. Where this state of things is due to the obstruction caused by an enlarged prostate, great care has to be exercised after the stone has been removed to keep the bladder thoroughly cleansed by regular washing, otherwise a recurrence is extremely likely to take place. Where there is no enlargement of the prostate and the patient after an operation for stone is able to completely empty his bladder by his own spontaneous efforts, as is usually the case with male children and young adults, recurrence after litholapaxy is extremely rare. Whilst in cases where the bladder is never spontaneously emptied and drained, the liability to recurrence is considerable. This is a point of importance relative to urine drainage.

These then are a few instances of the intra-vesical effects of morbid urine arising out of its chronic retention.

2. The extra-vesical effects of undrained urine are seen in cases where urine has been extravasated into the tissues outside the normal passages, as in the acute forms of this very serious lesion, and in the more chronic ones where it makes its way through the perineum and contiguous parts, by means of false passages and sinuses. This class (designated as No. 2) will be considered at my next clinical demonstration on October 15th. I will pass on to consider the circumstances apart from catheterism under which substituted drainage may be advantageously employed and how this may be effected.

Bladder drainage or the artificial withdrawal of urine is usually practiced by means of drainage tubes known as catheters. They are of endless variety and no one is wise who commences to use them without professional advice as to their selection and the precautions necessary in their employment.

A bougie, another form of urethral instrument, is not a tube, but a solid instrument used to dilate strictures or to prevent their recurrence. A catheter should never be constantly used where a bougie or solid instrument is only required. I will mention a case in point as a reason for this somewhat commonplace remark.

I saw a middle-aged man some time ago who consulted me about a troublesome stricture, which on one occasion had caused a painful retention of urine. The stricture had been carefully dilated for him and he had been taught and directed to pass a bougie for himself twice a week. However for reasons of his own he substituted a catheter of a corresponding size. He was very well when I saw him, and he consulted me as to his going abroad for a long period for business purposes. I advised him not to use a catheter but to revert to his bougie and to pass it regularly at increasing intervals as he had been directed. This he did not do, but continued to use his catheter as a dilator and at the same time to empty his bladder of any urine it might happen to contain. Yet he was able to completely evacuate his bladder by natural efforts. By the end of a year from this date his bladder gradually, but surely, struck work and at the age of forty-two he became absolutely dependent on his catheter, though there was no evidence to show any remaining structural opposition either in the urethra or the prostate to cause this. I have seen many instances of this and cannot but con-

clude that it is hazardous to gradually lead the bladder in the direction of abrogating its functions without sufficient reason.

But I am not speaking today of that large class of bladder and urinary cases for the drainage of which in some form or other, either used intermittently or by retaining it temporarily, a catheter suffices. I have referred to the bladder as sometimes by reason of decomposing urine and its effects resembling, so far as its contents are concerned, a chronic abscess. In such instances it will sometimes be found that the drainage of a catheter aided by the most thorough and careful washing-out fails to supply that free and continuous drainage which is required. In this respect the resemblance to a chronic abscess still holds good where other measures than a drainage tube and irrigation become necessary. It is in such exceptional cases that a more complete method of draining than any catheter can provide has to be considered. Bladder drainage of the nature I am now referring to is usually carried out by either opening the bladder itself above the pubes or the adjacent urethra from the perineum where something such as a growth has also to be removed; the former is the better, whilst if it is merely a matter for draining off dependently the foul contents of a never emptied bladder the perineal route is to be recommended.

Twelve months ago I drew your attention to the method I usually employ for urine drainage by the perineum. For the information of those that were not present at that demonstration I will briefly mention some of the points connected with this operation to which I attach importance. The operation consists in puncturing the membranous urethra on a centrally grooved staff sufficient to permit of the introduction of a finger into the bladder followed by a drainage tube made to fit correctly both in length and in relation to the surrounding tissues without side leakage. For the first forty-eight hours or so a specially made gum elastic tube known as my pattern should be used. On the withdrawal of this a soft gum elastic one (Annandale's pattern) with a drainage continuation and tap is substituted.

In this way a patient may be up and about in a few days wearing his apparatus and draining comfortably. A long confinement to bed is so avoided and the patient's condition is assimilated with that of an individual wearing and going about with a tracheotomy tube. In some instances the drainage soon proves effectual in restoring the natural character of the urine and can be dispensed with, whilst in others, for instance in advanced forms of prostatic obstruction, patients have by the permanent use of the apparatus been enabled to lead comfortable and useful lives without incurring the risks connected with more serious operations. In the journal* an abstract of a number of cases where bladder drainage was employed after the method I have described, some of which I showed here, will be found.

The third point for consideration is, what are the conditions which call for the use of catheter drainage, or, in other words, when should persons be advised to supplement voluntary efforts to empty the bladder by aid of a catheter? If the adoption of this proceeding were only of a temporary nature and speedily led to the complete restoration of the function of the bladder, one would not hesitate in recommending its trial in cases of residual urine with little or no delay, but when we recognize that such is not usually the case and that catheter life when once commenced is seldom ended, the matter is one that requires careful consid-

* Polyclinic, October 2, 1901.

eration. To condemn a man to the use of a catheter for the remainder of his life, however necessary this may be, is no light responsibility. A calculation made by a patient of mine to the effect that in ten years he had passed a catheter for himself nearly fifteen thousand times furnishes material for reflection; though these numbers are large they are by no means exceptional.

It is not the mere fact that a person fails to empty the bladder spontaneously by some ounces that should warrant us in advising that the balance be removed from time to time by a catheter. There should be other reasons than this. We should know that he is in some way inconvenienced or even harmed by the degree of retention, whatever it may be. And in using the word "inconvenience" I should be disposed to require evidence that it amounted to something more than this, either by reason of the frequency of the act, or the straining or "stammering" it called forth. Rising once or even twice in the night and with corresponding calls in the daytime would hardly suffice to warrant interference. In many instances I have thus concluded and allowed persons, though the function of micturition was more frequent than normal, and there was always a residuium of urine, to continue without recourse to the catheter. In thus advising, some have lived in comfort for many years without such assistance and without, I believe, detriment, whilst in others the adoption of catheter life has been advantageously postponed for some time. Then again it by no means implies that frequency is lessened and good nights secured in all cases where a catheter is advised. Considerable discretion, however, has to be exercised on these points.

The two reasons for the adoption of catheter life, namely, incontinence arising from the overflow of residual urine and decomposition of the excretion, are rarely debatable; where one or other exists the catheter becomes a necessity. In advising patients with some residual urine, in those instances, where the odor of the excretion is unnatural and offensive, I do not think this can always be correctly assumed as caused by decomposition. The most careful and regular catheterism combined with washing out the bladder with various things will often fail to remove it. It is a sickly sort of odor and usually occurs in cases of enlarged prostate and differs entirely from ammoniacal decomposition. It is, I believe, best treated by that class of drugs which are supposed to exercise a sterilizing effect on the urine. Of these urotropin, benzoate of ammonium and salol are probably the most suitable, and may be administered in sufficient doses without disturbing the digestion. In this way the urinary organs may be flushed from the kidneys downwards, a form of washing out which may often be advantageously combined with drainage.

PROTECTIVES AGAINST EFFECTS OF X-RAYS.

By Wm. Allen Pusey, A. M., M. D., of Chicago.

The question of protecting surrounding surfaces against the effect of X-rays comes up in all methods of using the agent for therapeutic purposes. This can be done in two ways: first, by surrounding the tube with an opaque covering so that the rays have exit only at one point; second, by covering the surrounding parts with some material opaque to X-rays. The first method is usually carried out by placing the tube in a box with a window in it through which the desired area of X-rays has exit. An example of these boxes is the one recommended by Williams, which is essentially a wooden box, painted on the inside with white lead. The objection to this method is the cumbersomeness of such a device and the inconvenience of using it. The second method, that of interposing shields between the rays and the surface, is more convenient under most circumstances. The first material suggested for these shields was lead, and lead in some form is the material generally used. Schiff and Freund suggested sheet lead one-twenty-fifth of an inch thick, to be covered with a blotting paper. Kienboeck uses lead plates, which he covers with flannel. Williams uses for the face "a mask made of gauze, and pressed into the shape of the face, such as may be purchased at theatrical supply houses," and he covers this with tin foil. Others have suggested the use of several layers of lead foil such as is used for lining tea boxes. Grube has suggested a foil made of 95 per cent. lead and 5 per cent. tin, plated with tin. This makes a foil of the brightness of tin that does not rub off like lead. Two to four thicknesses are required in order to furnish sufficient protection. I have invariably used sheet lead from one-fiftieth to one-twenty-fifth of an inch thick. Roentgen states that sheet lead one-sixteenth of an inch thick practically excludes all X-rays. I have found on trial that a rapid photographic plate, covered with lead one-twenty-fifth of an inch thick, shows almost no trace of X-rays from a strongly lighted hard tube after fifteen minutes' exposure. Fifteen minutes' exposure to a similar light of a photographic plate under one-fiftieth inch lead shows appreciable but very slight effect. The one-fiftieth inch lead, therefore, probably furnishes perfectly safe protection. I have found, however, lead one-thirty-second of an inch thick not too thick to be conveniently handled, and it is I believe the best thickness for these masks. Lead of this thickness of any width can be obtained from any plumber's supply house. My practice from the start has been to cover the masks on both sides with ordinary wrapping paper. This makes them clean to handle, furnishes satisfactory insulation for the lead, and has the advantage of being easily washed off and replaced. It is simpler than the other coverings suggested and can be more readily renewed. These lead sheets can be made of any size with apertures in them of any desired shape, and very little ingenuity is required to adapt them to any of the surfaces of the body. For most work about the face these masks can be very readily adapted without any especial shaping, but where it is desired to make a mask of the shape of the face, I have found it exceedingly convenient to possess a model of the head and neck made in wood. On this mould it is easy with a little practice to hammer the lead sheets into perfect masks of the face. Holes of any shape can be cut in them and the masks then covered with paper.

For exposing special parts masks of special design are required, but with a little patience I have never found it difficult to adapt a mask to any part of the body. For making exposures in the mouth and pharynx I have used lead masks of sufficient size to cover the face; to this is soldered at right angles a short piece of block tin tubing such as plumbers use, and a hole is cut through the mask to correspond with the hole in the pipe. This pipe can be moulded or cut to the shape desired. In this way a speculum can be improvised which I have found quite useful. The patients have not objected to it. For making vaginal exposures I have used the ordinary Ferguson glass specula. The patient is placed on an ordinary gynecological table on the back, with the knees drawn up as for vaginal examination. The thighs are protected by lead masks, which reach from below the knees to the inguinal folds. Another mask is made wide enough to entirely protect the perineum, with a slit in it corresponding in width to the speculum. This is placed around the speculum in such a way as to protect the perineum. The speculum must be retained in position by an assistant's hands, and the additional protection needed in order to cover all exposed parts is furnished by a lead mask which the assistant places around her hand. This plan of protecting the perineum, while apparently cumbersome, has proved not difficult to carry out and satisfactory.

For making exposures in the mouth or vagina, or even in the rectum, Caldwell's tube furnishes far and away the best method. Indeed his tube for treating these cavities is in my opinion the greatest single addition that has been made to the technique of the therapeutic application of X-rays.

A good deal of ingenuity has been wasted in trying to devise masks to supersede lead or other metals opaque to X-rays. Among these hard rubber masks have been suggested. Hard rubber furnishes almost no obstruction to the passage of X-rays, and furnishes no adequate protection against the X-ray effects on tissues. If for any reason it is impossible to use lead, some slight protection may be obtained from the use of the oxide of zinc adhesive plaster. It is also possible to make a paste of an indifferent ointment and some powder opaque to the X-rays that will give protection. If bismuth subnitrate, which is opaque to X-rays, is rubbed in sufficient quantities with vaseline, or any other indifferent ointment, a paste may be made which furnishes strong obstruction to the X-rays. A layer one-sixteenth of an inch thick of a paste made of equal parts by weight of vaseline and bismuth furnishes fairly good protection to the skin upon which it may be spread.

At one time it was said that the coating with vaseline of a surface to be exposed to X-rays would protect it against X-ray burns. I have seen X-ray burns occur in many instances under vaseline and other ointments transparent to X-rays. Lately the interposition of a layer of paraffine has been suggested for the same purpose. This suggestion is doubtless a lineal descendant of the vaseline idea and is absolutely useless. I have experimentally produced X-ray burns under a coating of paraffine one-sixteenth of an inch thick, and I have no doubt that with equal ease I can produce a burn under a layer of paraffine one-half an inch or an inch in thickness. Indeed I think it may be stated dogmatically that nothing will prevent X-ray effects upon the tissues except substances which are opaque to the rays. The only thing necessary to produce X-ray effects upon the tissues is for the rays themselves to reach the exposed surface.

THE REPOSITION OF FRACTURED FRAGMENTS AS INDICATED BY THE ROENTGEN RAYS.

By Carl Beck, M. D., of New York.

Success in the treatment of fractures is based upon proper reduction of the displaced fragments. A displaced bone fragment conveys pressure upon the adjacent tissues, and a keen-edged fragment, if not reduced at once, may put the overlying tissues under such extreme tension that even a simple fracture may be changed into a compound.

If the displaced fragments are situated in the neighborhood of a joint, extreme protrusion of one of the fragments may be caused. If united in this false position the motion of the joint would be rendered painful, or even impossible. If one of the fragments rides upon another (juxtaposition), pressure is exerted on the soft tissues. Nerves passing over this region will be dislocated or unduly stretched so that atrophy or inflammation may result. In the latter instance neuritis, in the first paralysis, may result. Similar views apply to the tendons.

So reduction means the immediate relief of pressure. Non-reduction means persistence of pressure; in other words, permanent injury to the compressed tissues.

In order to accomplish exact reposition, the degree as well as the direction of the displacement must be known. If we can diagnosticate the false direction, our anatomical knowledge enables us to move the displaced fragment towards its normal position. If the fragments are situated at a superficial part of the body, the experienced surgeon sometimes *guesses* right, and after union is perfect he will *know* whether he had guessed right or not. If he did not, it is too late to correct.

The surgeon whose experience enables him to realize these facts does not want to guess but to know, and he can always know if he takes the trouble of consulting his infallible adjunct—the Roentgen rays. The rays tell him the mode and degree of the displacement of the fragments and thus suggest the therapeutic steps at the same time.

If the rays show the absence of displacement no effort of reduction should be made. Immobilization in a suitable dressing is the only thing required.

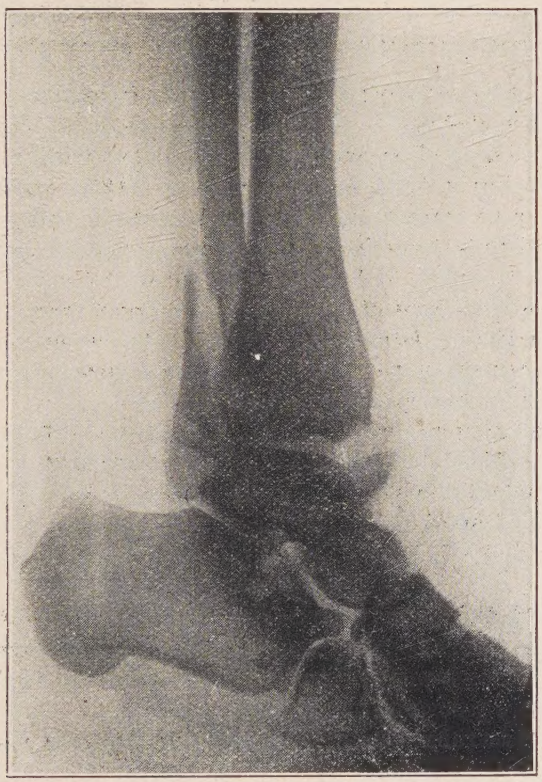
If the Roentgen rays show the direction of the fragment to be upwards, downward pressure has naturally to be used by the surgeon, and *vice versa*. If the direction of the fragment is lateral, sideward pressure will be indicated. After reposition is accomplished a plaster of Paris dressing is applied. The fluoroscope of the skiagraph indicates, then, whether reposition was perfect or not. If not, the dressing must be removed and the position corrected. The character of the mistake made being recognized now, proper reposition can be expected with a greater degree of probability. But if the surgeon has failed again, he must change his dressing until his Roentgen guide shows him that he has succeeded in his efforts of reduction.

In fractures of the forearm or leg, where two bones are concerned, displacement may take place at different directions.

The text-books generally speak of one kind of displacement only. That such information is insufficient is proven by the Roentgen rays. Our illustration, for instance, represents a simple Pott's fracture in a woman of thirty-five

years. The fact that the internal as well as the external malleolus was fractured had been ascertained in this case before the Roentgen rays gave detailed information, since ecchymosis, intense pain, crepitus and abnormal lateral mobility at the ankle were present.

I was taught that reduction is accomplished best in such cases by pushing the calcaneum inward and forward. I have sometimes been surprised that in spite of carefully controlling the after-treatment, which consisted in the application of a Dupuytren's splint, in most of my cases there was an unsatisfactory result. When I found undue prominences around or below the malleoli, I consoled myself that there was excessive callous formation.



The Roentgen rays have shown the fallacy of such theories. What we so readily used to term callous proliferation was nothing else but a projecting piece of bone-fragment, adherent in a displaced position.

The above illustration shows that while the fibular fragment is laterally displaced, the tibial is directed downwards. Naturally, inward pressure upon the fibular fragment must put it into perfect apposition. But the tibial fragment could not be reduced laterally. In the first place, it would meet an obstacle in the astragalus, to which it descended; and, secondly, if there would really be no obstacle, it could not be pushed into its normal position by being pressed inwardly. The skiagraph, by showing us the descension of the fragment, tells us distinctly at the same time that proper reduction can be accomplished by

ascension only; in other words, by pressure in the *upward* direction. It is only thus that the widening of the mortise is prevented and the normal arch restored.

From this experience we learn that the proper treatment of fractures, just like many other lesions, is based upon individualization. And this can very seldom be carried out without resorting to application of the Roentgen rays.

VIABILITY OF BACILLUS PESTIS.

By W. J. Calvert, of St. Louis,

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For this work ordinary slips of writing paper were placed in test tubes and sterilized in autoclave at 120 C., on three successive days, fifteen minutes exposure each day. These slips were then inoculated with a forty-eight-hour culture. The following method was used: Agar slants were employed from which the cultures were scraped and suspended in sterile salt solution in a Petri dish; with sterile forceps the strips of paper were immersed in this suspension and placed in test tubes. Due care was taken to prevent contamination. After the paper had been inoculated cultures were taken from the suspension in the Petri dish to determine its purity at the end of the operation. These cultures were pure. The inoculation was done in an almost air-tight room which had previously been cleaned and washed out with carbolic acid.

In all fifty tubes were prepared on December 3, 1900, and placed in thermostat at 32° to 34° C. Five strips were used for each examination. The slips were placed in bouillon for forty-eight hours. From the bouillon pure cultures were obtained by plating.

On December 15, 1900, five tubes were examined, all of which gave positive results.

On December 20, 1900, five tubes were examined, three of which gave positive results. On December 28 a rat was inoculated with one oeze from one of the cultures recovered after seventeen days in thermostat. Death followed in forty hours. Cultures were recovered at autopsy.

December 31, five tubes examined with four positive results. (Twenty-eight days in thermostat.)

January 6, 1901, five tubes examined with two positive results.

January 11, 1901, five tubes examined with negative results.

January 16, 1901, one positive result. (Forty-four days in thermostat.)

The remaining tubes were lost by some fault in technique while transferring the paper from the dry tube to the bouillon.

Up to the seventeenth day in the thermostat all of the cultures were positive, all on the thirty-seventh day negative, and one positive on the forty-fourth day.

When the experiment was begun it was my intention to inoculate animals with cultures from each positive result, but with one exception it was impossible to obtain either house rats or monkeys.

For exposure to direct light and heat of the sun, tubes were prepared as above and placed in an inclined position on a brick pavement in direct sunlight. Two

tubes were examined, as above described, every fifteen minutes. All of the papers, up to and including those exposed for two hours and forty-five minutes, gave positive results. A rat inoculated with culture obtained after an exposure of two hours and forty-five minutes died in fifty-six hours. Cultures recovered from autopsy. All of the tubes examined after an exposure of three hours were negative.

These experiments show the pest bacillus to be rather more resistant than has ordinarily been believed. If the organism can live forty-four days on paper in a thermostat, it is reasonable to presume that it can live a longer time in a moist, cold, dark oriental room where more suitable culture media than dry paper might be found. This fact may assist in clearing up the origin of successive epidemics after the disease has been introduced into a given locality.

The maintenance of life and virulence after two hours and forty-five minutes exposure on a hot brick pavement to the tropical sun (130° to 140° F.) is worthy of notice. In most cities, especially oriental, there are many outdoor spots on which the sun never shines or for only a few minutes to an hour or so per day. Here the bacilli might live for an undetermined length of time.

3732 Olive street.

LIQUEFIED OXYGEN AND X-RAY TREATMENT OF MALIGNANT GROWTHS.

By Dr. A. Campbell White, of New York.

Liquefied oxygen is a term used in the above title as a substitute for the term liquefied air, because as used in the treatment of malignant growth the liquid air when it reaches the tissues to which it is applied is in reality liquefied oxygen. The reason for this is simple. The liquid air contains nitrogen and oxygen in the same proportions as the air we breathe—*i. e.*, about three parts of nitrogen to one of oxygen, by weight, and four to one by measure. As soon as the liquefied air is exposed to our ordinary air the nitrogen immediately disappears, leaving almost pure liquefied oxygen, because the nitrogen evaporates so much more rapidly.

To prove this rapid evaporation of nitrogen I mention the following simple experiments presented in a demonstration before the American Medical Association at Atlantic City:

If a lighted match is dropped into the liquid immediately after the latter has been poured into a glass, the light will be extinguished. Nitrogen evaporates much more quickly than oxygen, so that after a short time the liquid becomes very rich in oxygen, and if a lighted match should then be dropped into it, it would burn brilliantly, and combustion would be perfect; a lighted cigarette would blaze and be completely burned if dropped into it; even steel is melted in the same way if brought to a white heat before exposing it to the liquid.

Although liquefied oxygen has been applied to great advantage in many forms of skin diseases, chiefly lupus, and for the removal of foreign growths other than malignant, and although the same can be truthfully said for the use of the X-ray, we shall confine the subject exclusively to the use of these remedial agents in their application in malignant disease.

In the early part of the year '98 we began the use of liquefied oxygen in the treatment of skin affections, including malignant and benign growths and ulcerations. Since that time a large number of malignant cases have been treated. Only those cases which were considered inoperable, or cases of recurrence, were treated during the first two years; a few operable cases have been treated since, but most of the latter were so treated because of their refusal to submit to the knife. The treatment for something over a year past has been irregular, owing to our inability to obtain a regular supply of liquefied oxygen.

The difficulty in obtaining a regular supply has been somewhat compensated by the improved methods of keeping or confining it. For the first two years it was necessary to have for a day's supply from five to ten gallons of liquefied air, which had to be carried in a large tin can contained in a larger tin can, the intervening space being filled in with hair felt. This would all evaporate in one day whether used or not.

To-day a glass bulb is used. Within the larger bulb is a smaller one, the intervening space between the two bulbs is a vacuum. The vacuum being a non-conductor of heat, a gallon of liquid air can be kept for two or three weeks.

This bulb is called the "Dewar" bulb, and will prove to be a great benefit to the physician.

The difficulties of application have almost entirely disappeared by the use of more perfected and new instruments. The results obtained in these cases can be summed up by looking at the general effect upon the symptoms usually accompanying malignant disease, and the permanency of relief or recovery.

Facial epitheliomata have been naturally the most frequent form of malignant disease to come under our observation and treatment.

Pain, hemorrhage and discharge being the most disagreeable and frequently unbearable symptoms of this affection (excluding extension), the results of the treatment upon these manifestations is important.

Many cases are free from much pain; most cases have been accompanied by this symptom. In all cases there has been an increase in pain, lasting about one-half hour, and beginning from ten to twenty minutes after the application. This pain is due to the excessive congestion following the freezing of the part affected; with the exception of this pain due to treatment, it has been the universal statement of all patients who have had much pain previous to beginning treatment, that this symptom has troubled them less, or has diminished altogether.

In no case of epitheliomata, after the entire surface has been once treated with liquefied oxygen, has a patient had a sign of hemorrhage, while in some cases this has been a troublesome and grave manifestation of the disease.

The disagreeable and odorous discharge from the ulcer first increases, particularly after the first treatment, then gradually diminishes.

The process of healing takes place after some sloughing has resulted, and does not begin until several treatments have been given.

Small spots of healthy epidermis appear here and there on the surface of the ulcer where and when least expected. At the same time there are given off from the edges, not evenly, but in little out-shoots toward the center, healthy epithelium. The small spots of epithelium and the out-shoots from the edges finally coalesce until the entire surface is covered with good epidermis, somewhat red even beyond the original border of the ulcer, but with a remarkably slight scar. With time the redness disappears almost, if not quite, entirely.

The duration of treatment in these cases, as would be supposed, depends almost entirely upon the extent of tissue involved; but there is a difference in the time required to obtain a good result, which does not seem to depend so much upon the size of the ulcer as upon the resisting power of epitheliomata to the treatment in individual cases.

The treatment can be hurried or can be given more deliberately. The former method requires more severe application at each sitting, and is sure to be accompanied by a simple but severe inflammation of the surrounding tissues. The more deliberate method is undoubtedly the better method, giving better results, less discomfort to patients, and the object should be to avoid surrounding inflammation.

Liquefied oxygen has been given a fair trial on many cases of scirrhus carcinomata of breast, which have either been operated upon followed by recurrence or were so far advanced as to preclude operative interference when first seen.

Every physician familiar with these cases realizes that hemorrhage is a frequent and most dangerous symptom in almost every case. When the statement is made that in not one of these cases has there been the slightest hemorrhage after the second or third application, it sounds incredible, nevertheless this is positively so. One case can be cited of a woman fifty years old, who had a large scirrhus cancer of breast, and had been having hemorrhages, some very severe, for over one year when she came under observation. It is now two years since treatment was commenced, the patient has not had one hemorrhage since the first application of liquefied oxygen.

The odor in these cases is characteristic and extremely disagreeable to the patient, not to mention others obliged to come in contact with the sufferer. In the above case cited this odor was very decided and disappeared entirely after three months' treatment.

Descriptions of the X-ray, the technique employed in its use, and its therapeutical value have been so thoroughly exploited during the past year, that I can add no information.

About one year ago I became sufficiently impressed by the wonderful results claimed for the X-ray in the class of cases we were interested in to investigate and compare the results obtained with those obtained by liquefied oxygen.

Dr. S. G. Tracy, who has been using the X-ray since its inception, has associated himself with me in work on malignant and other skin diseases, thus giving an excellent opportunity for observation as to the relative advantages of the two treatments.

In the treatment of superficial eiptheliomata I would rather prefer the use of liquefied oxygen.

The result of treatment is purely local, and we know exactly what is being done, the final result being equal to if not better than that obtained by the ray.

In the treatment of scirrhus cancer of the breast where ulceration has not taken place, liquefied oxygen is excluded, while the ray may prove even more than beneficial; whereas when ulceration has taken place followed by hemorrhages and excessive odor, liquefied air is indicated, for I have noticed that the ray had not much if any early effect upon these two important symptoms.

The pain following the use of liquefied air to excess, I believe is more than

offset by the extreme prostration so frequently following a prolonged X-ray exposure.

Something which must always be taken into consideration in determining which treatment shall be used in a given case is the "Roentgen dermatitis," which is so obstinate in its treatment, and sometimes so extensive as to go on to ulceration. This of course is not true of liquefied oxygen, although there may be a simple inflammation around the edges of the parts to which the air is applied. This inflammation will always disappear in two or three days, and is not painful or accompanied by elevation of temperature or increase of pulse.

No doubt every operator of the X-ray has had cases of large scirrhus carcinoma of breast where the destruction of tissue is not sufficiently rapid to meet the situation, and he resorts to arsenic and other caustic measures as an adjunct to hasten matters. Here is where liquefied oxygen is indicated above all other measures, for liquefied oxygen is the most rapid and safest caustic, when used for that purpose; no systemic effect can be obtained by liquefied oxygen, which cannot be said of the other caustics used for this purpose.

In the treatment of sarcoma and internal malignant diseases, liquefied oxygen is excluded. Here the X-ray is certainly indicated.

It is extremely unfortunate that the commercial contests during the past year or two in liquid air companies have prevented a more general use of liquid air in these malignant cases which have been crying for aid as never before. A liquid air plant is being established at the present time in Los Angeles, California, also one in New York City, the products of which are to be used for medical and surgical purposes only.

After studying carefully the results obtained by these two methods, liquefied oxygen and the X-ray, in the treatment of malignant diseases, I am led to believe there are certain cases in which liquefied oxygen is the preferable treatment, and in certain other cases, as previously indicated, the X-ray is to be desired, but in most cases an intelligent combination of the two methods will accomplish more than either alone, and that in this combination we have the ideal local treatment of to-day for malignant diseases.

537 Fifth Avenue.

CLINICAL REPORT.

REPORT OF A CASE OF SYRINGOMYELIA.

By M. W. Hoge, M. D., of St. Louis.

The patient was kindly referred to me by Dr. Mudd on July 13, 1902, on account of a paralysis of the deltoid which had come on rather rapidly a few days before.

The patient is a man, aged about forty-four, of Irish nationality, by occupation a painter. There is no history of hereditary diseases in the family, or of previous serious illness on the part of the patient.

Several years ago, however, he had some inflammatory trouble of the subcutaneous tissues over the left scapula, infraspinous fossa, which terminated in abscess formation and the destruction of the greater part of the infraspinatus muscle.

He uses tobacco and alcohol, the latter at times to excess.

He gives a history of having since childhood a sensation of numbness over the left side of the neck, extending slightly onto the inferior maxilla. About twenty years ago he noticed beginning wasting of the small muscles of the left hand, which has increased up to the present time. On examination the patient is seen to have a general muscular development which is rather above the average, with the exceptions above mentioned. All of the intrinsic muscles of the left hand are atrophied, and to such an extent that the patient has but little use of this member. The appearance of the hand is that observed in the Aran-Duchenne atrophy. The deltoid paralysis is not complete, being most pronounced in the clavicular portion of the muscle. The patient is able to voluntarily contract it, but not to a degree sufficient to raise the arm from the side. His pupils are equal and react normally. His station is good. The two sides of the face are contracted equally. The tendon reflexes are all increased except the scapulo-humeral and the wrist-jerk of the left side. The deltoid responds well to both galvanic and faradic currents, and without reaction of degeneration. In the intrinsic muscles of the left hand but feeble response can be obtained, Tactile sense is apparently normal over the whole body. There is, however, distinctly diminished perception of pain and diminution or absence of perception of temperature over two large areas. The one extends from the lower border of the left inferior maxilla down the left side of the neck, and over the left half of the chest to about the fourth rib anteriorly, and posteriorly to the spine of the scapula. Medially it extends just to the median line of the body both anteriorly and posteriorly. It also extends over the left shoulder, and the whole of the left arm and hand.

The second region of disturbed sensation is on the right side and is bounded above by a line drawn horizontally around the body at about the level of the seventh rib. It also extends on the trunk just to the median line both anteriorly and posteriorly. Behind it reaches downward to the lower border of the gluteal muscles. In front it extends down the anterior aspect of the thigh, gradually fading out near the knee. There have been no vesical or rectal symptoms.

The history and symptoms of this case leave room for no other diagnosis than that of syringomyelia, the deltoid paralysis being probably due to a

small hemorrhage in the neighborhood of those cells of the anterior horn of the cord from which the motor fibers of the circumflex nerve arise. This complication is of not infrequent occurrence in syringomyelia.

Since the above date the deltoid paralysis has considerably improved, showing that if such was its origin, the implication of the motor cells was not of a destructive character, but more probably pressure from an effusion near them. The atrophy is in muscles supplied by the terminal filiments of the median and ulnar nerves, whose cells of origin are in the gray matter of the cord from its fifth cervical to its first dorsal segment. The boundaries of the area of sensory disturbance on the left side indicate an implication of the sensory tracts of the cord from the second cervical to the fourth dorsal segment. The area of anesthesia on the right side probably indicates a second lesion in the sensory tracts of this side at about the eighth dorsal segment. Not necessarily, however. In the so-called Brown-Sequard paralysis we observe a transverse lesion of a lateral half of the cord producing an anesthesia of the opposite half of the body below the lesion; to explain which is invoked the theory of a decussation of the sensory fibers soon after their entrance through the posterior roots. If this supposed decussation be a fact, then the lower area of anesthesia might be due to an implication of its fibers in the lesion in the cervical region of the opposite side, as they ascend through the sensory tracts of that region.

We must remember, however, that this spinal decussation of the sensory fibers is only an hypothesis, which has no basis in histological observation and is not universally accepted (*vid.* Long; Les Voies Centrales de la Sensibilite Generale, 1899).

The lesion of syringomyelia, however, is often of considerable longitudinal and irregular lateral extent, and so may produce motor and sensory disturbances of very irregular distribution. This case is an example of the slowness with which the disease often progresses, since it is now probably more than thirty years since the first symptom was observed. Probably the greatest danger to the patient for the near future is that of its extension upward, so as to involve the respiratory center in the medulla.

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EDITORIAL COMMENT.

THE INTERSTATE ABSTRACTS FOR 1902.

We do not wish to undervalue the department of a journal which consists of a few complete original articles. Such articles have their fixed place and are of undoubted value especially to the scientific original worker. He, as a matter of course, must have the statistics, measurements, etc., which an abstract, from its very nature, cannot contain. In calling attention, however, to what has been accomplished in the way of abstracting the medical literature of the past year, the editors of the INTERSTATE point with a feeling of pride to our index of Vol. IX. The list of abstracts which it contains shows the reader substantially the progress that has been made in every field, as far as detailed, in four languages. We have abstracted seventy-four foreign publications, not including those on the shelves of the St Louis Medical Library to which the JOURNAL subscribes for all its editors. In addition to this a large number of foreign monographs have received attention, at the same time we have had access to practically every special and general journal published in the English language as well as a large number of German and French books on special subjects.

Twelve men, all of them specialists, have been richly supplied by the INTERSTATE with medical literature from Germany, France, England, America, Austria, Italy, Belgium, Russia and Japan. In consequence it has been possi-

ble for this corps of workers to furnish in each number a line of abstracts which could not be secured under any less favorable combination of circumstances. It has been our aim to give special attention to the material which our subscribers do not have access to, a material which it is not natural to suppose that most of them could read if they did have, for it must be admitted that our busy practitioners, no matter if they had the inclination, are scarcely possessed of the training which enables them to read German, French and Italian. We have for this reason purposely neglected, to a certain extent, the American journals to which all have access. In substantiation of this we ask only a comparison with the abstracts found in the average American medical publication.

Enough for quantity. As to the quality of our work in this particular we have certain definite claims to make. The articles which we have reviewed have not been merely skimmed or simply the authors' conclusions reproduced. Our work in this line has not been paid for by the yard, so to speak, or done mechanically by men paid to abstract this or that entire journal irrespective of the interest which its contents may or may not have had for him. With us, on the other hand, a specialist is in charge of each department, and in doing his work reads his articles for his own instruction and in writing his abstracts does it with the exercise of a certain discrimination which cannot be expected from a man who does the same work after the manner of a clerk or bookkeeper.

In short, it has been our aim to give our subscribers, most of whom are general practitioners, the greatest possible amount of recent general information, and we trust that their appreciation of our results justifies the efforts which we have made.

BUBONIC PLAGUE IN THE UNITED STATES.

It is high time that the United States Government instituted some radical measures for the extermination of bubonic plague in California. The time has long passed to investigate whether plague does or does not exist in this country, and the prevention and eradication of the pest no longer admit of procrastination. It is amusing, yet true, that while our medical students are being instructed in the science of hygiene, and in the prevention of infectious and contagious diseases, that one of the worst scourges known to medical science is being allowed to propagate in our own country. The problem is not difficult of solution. Our institutions are prepared at all times, when the health of a community is at stake, not only for legislative measures, but for their swift and sure execution. The means by which the plague is transmitted, and the manner in which it has been successfully exterminated in the East stand as shining examples for us, and likewise as a reprehensible evidence of the neglect in the case of California. Reports show that there have been thirty-six cases since January 1st, all but one of which ended fatally. The success of the measures taken in Japan demonstrate what can be done. Isolation in our case will not be sufficient. Unless present measures prove speedily efficient, it may be found necessary to eventually exterminate the whole of Chinatown in San Francisco, an environment which reeks with filth and with catacombs of disease and contagion. The seed has been successfully implanted, and the *fons origo* is now in San Francisco rather than elsewhere. Experiments have shown that the vitality of the plague bacillus in the bodies of those who have died from the disease, persists from twenty-five to thirty days (Yokote, *Centralblatt fuer Bakteriologie*, No. 23, p. 1030,

1898). Therefore, there is a double responsibility. Wyman (Document No. 2165, Treasury Department, Washington, 1900) claimed that bubonic plague can be easily controlled by careful isolation and sanitation. There is no excuse for California. The state has laid itself bare to the severest rebuke and condemnation, which can only be effaced by speedy and radical measures.

URETERAL CATHETERISM AND SEGREGATION.

It is owing to the difficulty and the sometimes apparent impossibility of catheterizing the ureters, and to the great skill and ability necessary to do it, that has made surgeons endeavor to find other means of obtaining the urine separately from each ureter. Out of these considerations has grown the segregator. Like other instruments and methods of operating, no one will answer for all purposes. There are cases where ureteral catheterism is the procedure of choice, and, undoubtedly, there are others where the segregator is indispensable. So that it seems that both methods will have a place in the practice of surgeons. Where it is impossible to catheterize the ureters by one or the other of the several instruments for that purpose, the segregator is of necessity. Where one wishes to differentiate ureteral from kidney disease, as Lewis suggests, for instance, the catheter is of necessity. But in a large proportion of cases the segregator is sufficient, and, as it is much more simple both for the surgeon and the patient, it will, no doubt, be extensively employed. Recently Luys and Cathelin have simplified the process very much by constructing instruments which act on the principle of dividing the bladder into halves, without making a water-shed separation, thus rendering the procedure much less painful and disagreeable to the patient. That the specialist should be capable of employing either or both goes without saying. So that the advocate of ureter catheterism or segregation to the exclusion the one of the other, should rather be considered a step backwards.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

A Case of Adams-Stokes Disease.—LEWY, Berlin (*Zeitschrift fuer Klinische Medivin*, vol. xlvii, part 3 and 4).—The case presented all the typical symptoms of this rare disease, which is characterized by a diminution and occasional ceasing of the heart's action, cold, clammy skin, loss of consciousness, mydriasis, movements of the eyes, tonic and clonic spasms of the voluntary muscles of the extremities, grating of the teeth, Cheyne-Stokes respiration, and frequent outcries. This case presented one phenomenon not mentioned in the reports of other cases, and that is outbreaks of perspiration following each paroxysm.

Depending upon the severity of the attacks, the pulse would cease for from five to eighty seconds, and during these periods no action of the heart could be detected by ordinary methods. There was no venous pulse in the jugulars. It is worthy of mention, too, that during the intervals of even one minute, when there was no demonstrable cardiac action, there was no increase in the area of heart dullness. In spite of the interruption of the cerebral circulation for comparatively long periods of time, consciousness returned very promptly upon the renewal of the circulation. In this case the patient labored under the impression that he had dreams during the periods of unconsciousness. He was unable, however, to relate them.

The cause of the bradycardia must lie in the nervous apparatus of the heart. It must come about either through some stimulation of the inhibitory nerve, the vagus, or through a paralysis of the augmentatory nerves, the sympathetic. The cold skin and mydriasis speak against the latter. The question arises as to the location of this stimulus, whether in the medulla, in the peripheral branches of the vagus, or in its distribution in the heart muscles itself.

The presence in each attack of profuse perspiration, and the coldness of the skin would seem to indicate that the irritation lies in the medulla oblongata, where the vagus center, the vaso-constrictor center, and that of perspiration are in close proximity.

Atropin was used in this case because it is known to exert a specific paralyzing influence upon the vagus. While it seemed to control the perspiration, it had practically no influence upon the action of the heart.

Concerning the Fate of Carbohydrates in the Intestines of Infants.—HERDENIUS, Upsala (*Archiv. fuer Verdauungs-Krankheiten*, vol. viii, part 4 and 5).—After Zweifel and Korowin showed that in the new-born, diastatic ferment was produced only by the parotid gland, and that the pancreatic diastase was not present until the second month, it seemed irrational, theoretically at any rate, to use carbohydrates in the nourishment of younger infants. The author's experiments were conducted with a view of clearing up the existing inconsistencies.

Babes were fed on milk-carbohydrate mixtures. Through the determination of the acidity of the feces of infants fed on simple milk diet, and on a diet rich in carbohydrates, it was possible to determine, approximately at any rate, the influence of carbohydrates on the acidity of the feces. Through exact sugar determinations, etc., the author was enabled to arrive at exact results. Various forms of the carbohydrates were utilized.

These experiments led to the conclusions that (1) in children several months old, fed on diet rich in carbohydrates, a small quantity was found in the dried feces, and that the feces contained less acid in these than in younger infants, viz., two or three months old; (2) a child two months old can gradually develop a tolerance for carbohydrates; (3) nourishment consisting of the simple flours in general resulted in the finding of less carbohydrates and less acid in the stools than did the nourishment consisting of complicated carbohydrate mixtures, such as Zwieback, etc.

The Diagnostic Significance of the Catheterization of the Ureters.—ADRIAN, Strassburg (*Centralblatt fuer die Grenzgebiete der Medizin und Chirurgie*, November 8, 1902).—This most thorough review of the above subject will continue through two or more numbers. In this article, 133 literature references are cited with the promise of more in the following papers.

The catheterization of the ureters is dealt with (1) as a diagnostic aid in the general determination of an affection of the urinary system; (2) for the determination of the position of the lesion in the urinary apparatus; (3) to determine which kidney is involved, etc., etc.

When completed, this article will present a most exhaustive review of the subject in hand, both with reference to its diagnostic and therapeutic significance.

Parenchymatous Gastric Hemorrhages.—MOSER, Rostock (*Muenchener Medicinische Wochenschrift*, November 4, 1902) reports a case of hematemesis in a male, forty-one years of age. The vomiting occurred periodically, and was accompanied by severe pain in the epigastrium. There were no marked symptoms pointing to round ulcer or carcinoma. The gastric contents contained HCl, but no lactic acid. In view of the rapid decline, an exploratory operation was done. There were no bleeding points or thickening demonstrable. Gastroenterostomy was done. The patient died three days later. The autopsy revealed hypertrophy of the muskulatur, and near the pylorus four small hemorrhagic points not larger than pin-heads.

The author does not attempt to give an unqualified explanation for the hemorrhage. He calls attention, however, to the experiments of Schiff and Elstein in which the gastric hemorrhages were produced through injury and irritation of certain portions of the brain. It is well, therefore, to keep in mind the possibility of the cerebral origin of such hemorrhages.

Gastric hemorrhages have been noted in appendicitis, hypertrophy of the spleen, in cholelithiasis, after operations on the gall-bladder, after herniotomy, in incarcerated hernia, in aneurisms and varicosities of the gastric vessels, in acute and chronic gastritis, etc., etc. None of these, however, could account for the bleeding in this case.

The So-Called Scarlatiniform Exanthema Following the Use of Serum in Diphtheria.—LEINER, Vienna (*Wiener Klinische Wochenschrift*, No. 43, 1902).—Since serum therapy has been employed in diphtheria a series of skin eruptions have been noted, due to the action of foreign serum in the blood and not to the antitoxine itself. The author maintains that the cases of scarlatiniform serum exanthemata were without doubt cases of true scarlatina, and bases this opinion upon the following observations:

1. The so-called scarlatiniform erythema occurs in the first five days after the injection, which is not true of the exanthemata due to other serums.
2. The cases were followed by typical lamellated scaling.
3. Following these exanthematæ glomerulo-nephritis was frequently observed.
4. The eruptions were contracted by other children in the same room.

5. The contagion was very tenacious. Isolation and formalin disinfection could not always prevent a new outbreak.

6. The eruption and the "peeling" often started from the point of injection.

In one case there developed, aside from the scarlet eruption, a typical serum-urticaria.

Angio-sclerosis of the Arteries of the Intestines.—ORTNER, Vienna (*Wiener Klinische Wochenschrift*, No. 44, 1902) reports a case presenting periodical attacks consisting of burning pains in the abdomen, distention of the same, difficulty in breathing, etc. These attacks occurred at intervals of three to twelve months. In the interval the physical examination was praetically negative; during the attack there was marked distention of the abdomen, sensitiveness, dyspnea, cyanosis, etc. Patient died one and one-half days after an exploratory operation from septic peritonitis.

The autopsy revealed marked arterio-sclerosis of the aorta from the celiac axis downward and of the superior and inferior mesenteric arteries even into the smallest branches.

The Diazo Reaction in Pulmonary Tuberculosis.—RAOUL DE BOISSIERE, Edinburg (*British Medical Journal*, November 15, 1902).—The author reports the results of the examination of the urine for the Diazo reaction of all of the consumptives admitted to the Victoria Hospital during the past year. He found it positive in a comparatively small number of cases, about eighteen out of one hundred and thirty. When present at all it was usually in cases with definite pyrexia. In eighteen positive cases there was but one exception to this rule. He found it associated with an advanced stage of the disease.

Though the reaction is present in a large proportion of the very advanced stages, it is absent in a considerable number.

In forty-three well-advanced cases, with extensive bilateral consolidation, crepitation, large rales, etc., the result was positive in eighteen, and negative in twenty-five. Some of the negative cases were examined a short time before death, and yet it was impossible to obtain a positive result. Some observers publish quite different reports. Bolli, for instance, claims to have found the reaction constantly in the second and third stages of the disease, and in many early cases. The author attributes the widely different results to lack of attention to the details necessary in applying the test. The presence of the reaction has a prognostic significance, being an indication of gravity. Of sixteen positive results among one hundred cases, thirteen are already dead, one is dying, and two are much improved. On the other hand, of the eighteen very advanced cases that gave negative results, only four have died and the rest are greatly improved.

Two Cases of Carcinoma of the Esophagus Presenting the Clinical Picture of Aneurysm of the Aorta.—KUCKEIN, Koenigsberg (*Deutsche Medicinische Wochenschrift*, November 6, 1902).—In both of these cases the symptoms which seemed to point so clearly to aneurysm of the aorta were due to carcinoma of the esophagus. The tumors had their origin from the anterior wall of the esophagus in its middle portion. They extended into the mediastinum, thus producing little or no pressure upon the esophagus. The lumen of the esophagus remained open, thus preventing the development of the cardinal symptom of esophagus carcinoma, viz., dysphagia. The posterior wall of the esophagus was entirely free. The tumor in its growth in the mediastinum produced pain, through pressure exerted upon nerves of sensation; the left recurrent laryngeal nerve was destroyed by the growth, producing hoarseness; dyspnea was produced through the pressure upon the trachea in the region of the bifurcation, etc.

The pulsation of the tumor that was so clearly seen on the radiograph was transmitted from the underlying aorta.

Actinomycosis Hominis in America, with Report of Six Cases.—ERVING, Baltimore (*Bulletin of the Johns Hopkins Hospital*, November, 1902), describes six cases of actinomycosis in human beings and sums up the American literature on the subject, covering about one hundred cases.

The cases are scattered widely throughout the country; though most of them are reported from the large medical centers. Seventy-two were males, twenty-three females, and in five instances the sex was not mentioned.

The youngest case was in a child of six years, the oldest in a man of seventy. The disease occurs, however, most frequently in middle life.

About one-fifth of the cases, in which occupation is mentioned, were farmers. The disease frequently becomes chronic.

Frequently there is no definite history of infection, though most of the cases are doubtless contracted from animals. The clinical characteristics vary greatly with the region of the body involved; the cervico-facial type are characterized by pain and swelling, and are frequently mistaken for toothache; in the thoracic forms the first symptoms are those of bronchitis or pleurisy; the abdominal cases frequently resemble appendicitis. The diagnosis is positive only when the ray fungus is found.

Extension frequently occurs by contiguity of tissue, or through transmission through the blood.

Recovery occurred in forty-five cases, improvement in fourteen, and death in thirty-two.

Forty-three cases were treated surgically; in thirty-four both surgical interference and the iodides were used; in nine cases potassium iodide was administered, without surgical interference, and in eleven cases the treatment is not mentioned.

The iodides probably have no specific action on the ray fungus. Its use is generally recommended in connection with free incision and drainage of the abscesses, and probably aids in the elimination of the fungus.

SURGERY.

IN CHARGE OF

WILLARD BARTLETT, M. D.

Histological and Experimental Contributions to the Study of the Incision and Suture of Abdominal Wounds.—NEHRKRON (*Beitraege zur Klinischen Chirurgie*, Band 34).—The author has sought to determine by animal experiments and by study of excised laparotomy wounds, the best place to make an incision and the best means of suturing the same. He also reviews at length the older arguments for and against incisions through the linea alba and those through the rectus muscle, as well as the various lines of incision in the flank. Although he does not state it expressly, it is quite clear that one object of the article is to defend the obsolete through-and-through suture, because the same is still used in Professor Czerney's clinic, from which institution this article emanates. After discussing at length the *pros* and *cons* of layer suture and through-and-through suture, the author comes to the conclusion that the patient's best interests are subserved by a combination of the two, for only by this means can the various layers be accurately approximated, and at the same time all dead spaces be obliterated. Sections which were made through fifteen excised laparotomy wounds, ranging in age from one day to six weeks, showed some interesting features. The suture in layers gave, of course, a better approximation of each layer than did the through-and-through, but dead spaces led to trouble in more instances

than one. It was found that the fasciæ healed best when the cut edges were brought together without any overlapping, and, in fact, that there was in reality an actual regeneration of these tissues instead of mere scar formation. He next made thirty operations upon dogs' abdomens and then excised the scars and made sections from the same. There was not much of interest learned from these studies in addition to what has been stated above. He merely succeeded in confirming the opinions already stated.

Researches in General Anesthesia with Ethylchloride.—GIRARD (*Bulletins et Memoires de la Societe de Chirurgie, de Paris*, No. 30, 1902).—The symptoms of this variety of anesthesia are very much the same as those of chloroform anesthesia, though they take place and disappear more rapidly. The author has performed a large number of experiments on animals and found that the dog is hardly affected by the drug, while the cat is profoundly influenced. For the human there is decidedly more danger than clinicians have supposed if the dose be large or the use of the drug be at all prolonged. It is surely possible in the human for the drug to produce complete inhibition of the vagus nerve. In choosing an anesthetic it must be said that none of them is absolutely harmless, so it resolves itself into a use of the least harmful of them; and, indeed, one can say that the drug under discussion is comparatively safe, though it is far from being absolutely so. It has a cumulative effect and may produce sudden death. The maximum dose for an adult is five to six c.c., and it should not be used longer than five minutes. It is splendid for a short operation and given before chloroform diminishes the chance of syncope, and when used with ether enables one to get along without the immense dose required in the initial stages. The anesthesia should be complete in all particulars within two minutes.

Eight Hundred Radical Bassini Operations and Their Definite Results.—GOLDNER (*Archiv fuer Klin. Chir.*, Band 68, Heft 1).—This remarkable number of eight hundred operations was performed in five years at Professor Alberts' clinic, in Vienna, and it may be considered a better test for the method that a great many young surgeons in the clinic did the operations, than could have been the case had they all been performed by the celebrated head of the clinic himself. Two years have passed since any operation herein described and some of them are more than six years old. It was possible for the author to make a personal investigation of four hundred and sixty-six of these cases, and he found in 7.5 per cent. only after-disturbance of any sort whatsoever. An actual recurrence took place in but 4.9 per cent. In fifteen recurrences there was a connection with the spermatic cord in but nine of them, the opening in the others being elsewhere. The greatest amount of tension on the sutures is, of course, at the lowest angle of the wound, and there the most recurrences were found as a matter of course. The chief indication for operation is expressed in the patient's own wish to be operated on, no matter what sort the hernia. However, the author does not advise an operation if the patient be above sixty, on acccount of the atrophic condition of his muscles. On the other hand, he will not operate under three years of age, or in cases of complete eventration. A generous portion of the article is devoted to the subject of local anesthesia, which has been very much used in this clinic, and which is highly favored, although in some cases the patients press so hard that it is imposible to tie the sutures. The author advises local anesthesia by all means where there is any contraindication to the general use of the drug. If the muscles are atrophic, the rectus is brought down with the lower two sutures in every case and silk is used for the muscle suture as well as for the aponeurosis. To prevent the appearance of crural hernia, after an inguinal operation, it is advised to suture Poupart's ligament to the periosteum of the ascending ramus of the pubis. One must also be very careful about avoiding a median lipoma, for behind it is often found the bladder. Injury to the

round ligament in the female has been found to give no bad result whatsoever. The patients sit up on the twelfth day and leave the hospital on the fourteenth in Vienna, unless there is some wound or other complication. The sutures in the aponeurosis may slough out without a recurrence, but if those in the muscle give way a recurrence is unavoidable. A varicocele has been produced by the operation, and in all the series of eight hundred but three patients died: one from chloroform and two others from embolism of the pulmonary artery.

Ano-Rectal Actinomycosis—(*Revue de Chirurgie*, No. 8, 1902).—It is little short of remarkable to notice the number of errors in diagnosis which have been committed in this connection, everything else having been considered before the possibility of actinomycosis has been taken into account. There are two ways for the germs to be introduced: one through the digestive apparatus and the other directly from without through the skin. It is sure that the different portions of the digestive apparatus are much more frequently involved in the manner under discussion than is generally supposed. When the infection is through the skin the superficial involvement may be great, but the deep parts remain almost healthy, the inverse being the case when the disease is of a descending origin. This latter method of infection may occur without there being any trace of actinomycosis anywhere from the lips downward, and this state of affairs of course renders the diagnosis more difficult. It is also noteworthy that long stretches of tissue may be involved in the transmission of this disease from a primary to a secondary focus. In the primary form of the disease the original focus may resemble a neoplasm or an ordinary inflamed area. The peri-rectal involvement may be as extensive as in any other form of inflammatory disease in this situation. The prostate, the bladder, or the peritoneum may become diseased secondarily. Of course the individual may be affected in one of two ways: either by compression of the rectum through the mass situated beside it, or else by suppuration into it when the mass has broken down. If taken early the disease gives a favorable prognosis, the treatment being free incision and the use of large doses of iodide of potassium. The diagnosis is made certain only by finding of the characteristic granules.

Congenital Hernia in Children and Its Radical Treatment.—Kremm (*Centralblatt fuer Chir.*, No. 46, 1902).—The author has not found a complete spermatic cord in any such case, but has noted that its components are invariably spread out over the sac. He refers at length to the well-known adhesions around such structures and gives his methods of dealing with the same in the disposal of the sac. It is, as is well known, often extremely difficult to separate this latter from the various structures in the vicinity without tearing it or injuring them. Hence Kremm, after ligating the sac, exposes it all the way to the testicle, then splits it and sews it around the elements of the cord, thus bringing the serous surface to an outward instead of an inward exposure.

The Definite Results of the Bassini Operation in Inguinal Hernia.—Matanowitsch (*Beitraege zur Klinischen Chirurgie*, Band 34).—Herein are expressed the results which have been obtained in the Heidelberg clinic from 1895 to 1900. As an indication for operation it is considered enough that a patient wishes to be free from his rupture no matter what its character, a statement which one finds borne out nowadays in the reports of many first-class surgeons. The technique as herein considered is slightly different from the original. Czerney does not put any of his stitches through the rectus muscle or its sheath and, instead of using silk, as Bassini directs, he uses sublimate catgut. Great weight is laid upon the nutrition of the aponeurosis, and to this end the author directs that the subcutaneous flap be not dissected from it, that the stitches be put very close to

the edge and not tied too tightly. The cases under consideration were seen from two to six years after the operation, consequently the test must be considered a fair one. In one hundred and seven instances there were but three actual recurrences; and strange to say among the cases that suppurated there was not a single recurrence. This is explained by the fact that the stitches in the muscle all held and this lower layer was enough to protect the abdominal wall. This speaks, in the author's estimation, strongly in favor of the Bassini operation when compared with Kocher's method, since in the latter method, there being but one row of stitches beneath the skin, suppuration loosening them would necessarily lead to the defeat of the surgeon's original plan.

THERAPEUTICS.

IN CHARGE OF

ALBERT E. TAUSSIG, M. D.

On the Action of Fluid Extract of Cactus Grandiflorus. — T. v. ZELENSKI (*Klin. Therap. Wochenschr.*, No. 22, 1902).—There can be no question that digitalis leaves surpass all other drugs used in disturbances of the circulatory system, in respect to reliability and intensity of action. Nevertheless, we cannot always make use of this remedy either because it produces anorexia, nausea and vomiting in many cases, or because the cardiac condition itself contraindicates its use. The chief of these contraindications are: (1) Fatty or fibrous degeneration of the myocardium; (2) an abnormally slow cardiac action; (3) marked arteriosclerosis, and (4) lesions of the aortic valves, though the use of digitalis in the last group of cases has of late again become a subject of controversy. Moreover, even in those cases in which we are using digitalis successfully it is necessary to have other cardiac stimulants for use during those interruptions in the administration of digitalis that are so essential. The number of those other cardiac stimulants is considerable, but none quite serves the purpose. The most frequently used is strophanthus, both on account of its rapid effect and because of its lack of cumulative action. Its unpleasant taste, however, often produces a nausea that greatly limits the usefulness of the drug, the more so as its administration is often followed by digestive disturbance: vomiting and severe diarrhea. Sometimes it has a deleterious action upon the kidneys, producing an albuminuria, and is, therefore, absolutely contraindicated in cardiac cases with renal lesions. The other substitutes for digitalis—adonis vernalis, spartein, convallaria majalis, coronilla, erythrophleinum chloride, oleander, etc.—are far from being satisfactory as regards constancy and intensity of action.

The writer is one of the first German clinicians carefully to test the fluid extract of cactus grandiflorus, which for some years has found wide use both in England and America. His observations lead him to the following conclusions. In none of his cases did he note any digestive disturbance, certainly never any vomiting. In one of his cases, for experimental purposes, tr. strophanti was substituted for the cactus during one day; the patient promptly responded with violent attacks of vomiting that lasted two days, and absolutely prevented the further use of strophanthus. Vertigo and insomnia were never observed during the administration of cactus. Even after long-continued use of large doses of the drug, there were no untoward symptoms, showing that cactus has no cumulative action. In one case very large doses (eighty-five drops four times daily) were given for more than a month without a trace of intoxication. Under the influence of the drug the pulse becomes somewhat more rapid and considerably stronger and of better volume. The author took a large number of sphygmo-

graphic tracings, and, except in cases of aortic insufficiency, where the pulse wave is always high, found that the height of the pulse wave was markedly increased after the use of cactus. The drug apparently has no direct influence for good or evil upon respiration itself. Cactus never causes renal irritation, but neither has it any diuretic properties.

The best results were obtained in cases of uncompensated aortic lesions In this respect the writer's observations agree with those of Myers and Wilcox, who found cactus almost as distinctly a specific in aortic lesions as digitalis is in those of the mitral valve. The patients who had had all the signs of aortic incompetence—great dyspnea, arrhythmia, edema of the extremities and ascites—left the hospital, after a sufficient course of treatment by means of cactus extract, with a greatly improved cardiac action and no trace of edema. The recession of the cardiac dilatation could progressively be demonstrated by means of percussion. In mitral affections the results of cactus medication were much less satisfactory. The dyspnea grew less for a time, the renal functions improved, but a permanent improvement of the cardiac action could not be obtained by means of exclusive cactus medication. On the other hand, the drug acted very well, indeed, during the intermissions between successive courses of digitalis.

The writer obtained good results in cases of chronic pleuritic exudates in which the pulse was weak and the cardiac sounds feeble. The excretion of urine was increased, the pulse improved and resorption of the exudate hastened. In the course of infectious diseases, also, cactus was found serviceable.

The writer uses much higher doses than are usually prescibed. The usual dose of the fluid extract, five to fifteen drops three times daily, is much too small. At least thirty drops should be given three times daily, and even much larger doses are quite free from danger. The taste of the fluid extract is not unpleasant: the drug may be given in a little water or wine. Its active principle has not yet been isolated.

The Use of Incandescent Electric Light Upon Infectious Diseases.—KREBS (*Ther. der Gegenwart*, 1902; *Centralbl. f. d. ges. Therap.*, 1902, No. 10).—Krebs denies the beneficial influence of incandescent light upon bacterial diseases as described by Gebhardt and Aufrecht. Light does, to be sure, kill gelatine or agar cultures of all bacteria, but within the organism this process does not take place. Krebs infected mice and guinea-pigs with anthrax, and in keeping some in the dark, exposed others to a constant strong light. The latter lived no longer than the former.

Intravenous Injections of Oxygen.—MANIANI (*Gazz. degli ospedali; Centralbl. f. d. ges. Therap.*, 1902, No. 10).—Baccelli was the first who administered drugs in heroic doses intravenously, and also the first to use oxygen inhalation at the death-bed of Victor Emanuel. Gaertner first proved that large doses of oxygen could be administered intravenously to a dog without ill-results, and the writer has continued his experiments. Having found that 10 c.c. of oxygen could be injected into the veins of a dog weighing 5 kg., and 30 c.c. into one weighing 10 kg. without detriment, he investigated the effect of still larger doses. Into the femoral vein of a large dog weighing 14 kg. three liters of oxygen were slowly injected in the course of three hours. It was only after the third liter had been entirely injected that symptoms of embolism, to which the dog succumbed, showed themselves. He reports the case of a man who was brought to the hospital apparently moribund of pulmonary tuberculosis. After an injection of 200 c.c. of oxygen into the dorsal vein of the right foot the patient emerged from his collapse and spent a comfortable night. He died the next day, however, and at the autopsy nothing suggesting embolism was found. The rationale of the method is that when used in cases of deficient air-supply, whether due to pulmonary consolidation, stenosis of the upper air-passages or sluggish circulation, the red

blood corpuscles being poorly supplied with oxygen, absorb that gas greedily It is essential to make the injection very slowly and into some vein far distant from the heart that the venous blood may have ample time to absorb the oxygen. While the procedure has as yet been insufficiently tested, it promises to be of great value in cases of cyanosis where what we desire is to tide the body over some temporary crisis.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

R. B. H. GRADWOHL, M. D.

Cultivation of the Lepra Bacillus.—G. VAN HOUTUM (*Journal of Pathology and Bacteriology*, September, 1902).—This writer reports success in cultivating the bacillus lepræ. The medium was made of one-third beef broth and two-thirds fish broth. At 36° C. there occurs a general turbidity and the collection of a small, viscid, coherent deposit at the bottom of the tube. The bacillus could be made out in the hanging drop, in chains and singly. Actual motion was also seen. After cultivation of the bacilli on this special medium, the organisms could also be induced to grow out on plain agar and ordinary nutrient beef broth. On agar, the typical appearance of colonies was a "dew-drop" formation. In the case of these plain media, the reaction was strongly alkaline. After a few days, the "dew-drops" showed a more or less whitish center with transparent margins which later became less transparent and even indented or fan-shaped. In twenty-four-hour-old gelatin stab cultures, there form minute grayish colonies along the stab, with a slight thin pellicle on the surface. Arborescence could be noted and liquefaction made out on the fourth day. The bacilli grown on this special medium stain well with Loeffler's methylene blue, with Nicolle's carbol-thionin and with diluted carbol-fuchsin. They are decolorized according to Gram's method. Degeneration forms are seen in older cultures.

The writer concludes from his researches that (1) he has cultivated from leprous tissue a bacillus that differs from Hansen's bacillus in staining reaction and size, and that this leprous tissue contains many leprous bacilli, apparently in a pure state; (2) that these bacilli, mixed with dilute human serum, show the Pfeiffer-Bordet reaction *in vitro*, leper serum acting much more rapidly than non-leper serum; (3) that the reaction of leper serum is brought about by the concurrent action of two substances present in leper serum, the sensibilizer and the alexins, and that the reaction of non-leper serum is only to be attributed to the presence of the alexins; (4) that this sensibilizer, which attaches itself to the described bacilli, only occurs in leper serum; (5) that experimental researches have proven that the sensibilizer is a specific substance, that there exists a causal connection between the micro-organism cells and their sensibilizer, and that the occurrence of a sensibilizer is a general law in immune sera; (6) that the bacilli which he has cultivated and described are the true agents of leprosy, because leper serum alone contain a sensibilizing substance for them; (7) that the susceptibility of leper bacilli to the action of leper serum, even in weak dilutions, gives a plausible explanation to the numerous failures to cultivate these bacilli.

Sterility of Bile.—E. S. CARMICHAEL (*Journal of Pathology and Bacteriology*, September, 1902).—The writer made a number of experiments to determine what influence the injection of bacteria into the portal system had on the sterility of the bile in the gall-bladder. Typhoid and colon bacilli and streptococci were injected, and in all experiments, with the exception of one, after the injection of

varying quantities from five minims upwards, the bile remained sterile and in its normal condition, showing that although the general circulation contained numerous bacteria, none could pass through the normal hepatic tissue. It is therefore probable that infection of the bile does not take place through the portal vein or liver from the gastro-intestinal tract.

Ring Test for Indol.—S. B. GRUBBS and EDWARD FRANCIS (Bulletin No. 7 of the Hygienic Laboratory, U. S. M. H. S.).—The writers state that the text-book description of the procedure of testing for the production in culture media of indol is not sufficiently comprehensive, and consequently the statement that a given organism does or does not produce indol leaves us, in most cases, very uncertain as to just what is meant. They recommend the "ring test" in determining the presence of indol on account of its simplicity, its clearness and its delicacy. The following comprises the technique to be followed: To 7 c.c. of the 24-hour-old culture add 8 to 10 drops of concentrated sulphuric acid, and shake; then let 3 or 4 c.c. of a 1-1000 sodium nitrate solution run carefully down the side of the tube so as to form a sharp line of contact between the heavier culture and acid and the lighter nitrate solution, when the pink color will contrast sharply with the portions above and below.

Collodium Sacs.—S. B. GRUBBS and EDWARD FRANCIS (Bulletin No. 7 of the Hygienic Laboratory, U. S. M. H. S., May, 1902).—Since the publication of the work of Metschnikoff, Roux and Salimbini on the toxins of cholera, the growing of cultures in collodium sacs placed in the peritoneal cavities of animals has become a common procedure in bacteriological laboratories when it is desired to increase the virulence of a given organism through the action of the nutrient body juices, and yet be protected from the influence of the body cells and the phagocytes. As usually made, the sac is moulded over the end of a glass rod by dipping it several times into the collodium solution, after which it is peeled off These writers recommend that the sac be made over a glass frame made of a small test-tube, through the sides of which numerous small holes are blown. This insures perfect firmness to the sac when it is inserted into the animal. It overcomes the many disadvantages of the sac as previously employed. In the sac hitherto described there is the danger of tearing and destroying the sac in peeling it off the rod. There is considerable difficulty in attaching the sac to the glass frame, and if no frame is used the sac has no support, may become shriveled, and is liable to tear on removal from the animal's abdominal cavity if bound around by adhesions.

Preliminary Note Upon Employment of an Antistreptococcus Serum in Severe Cases of Scarlet Fever.—GEO. A. CHARLTON, M. D. (*Montreal Medical Journal*, October, 1902).—This observer reports favorable results in the treatment of scarlet fever with the use of an antistreptococci serum. He believes that the good effects of this serum are due to the fact that scarlet fever, pure and simple, is a mild disease, but that the severe cases are those in which there is a mixed infection—*i. e.*, a streptococcic plus a scarlatinal infection. He says that simple uncomplicated scarlatina means no added streptococcus infection. In the cases treated by this method he found streptococci in the blood and throat. With this serum he induced a rapid subsidence of the pyrexia; an accompanying decrease in pulse-rate with improvement in tension and rhythm; prevention, or at least marked amelioration of such complications as cervical adenitis, otitis media and albuminuria; rapid and favorable convalescence in the majority of cases.

He believes that the diplococcus of Class can be found in a great number of cases of scarlatina, but does not think it causes the disease.

[EDITOR'S NOTE.—The diplococcus of Class has been made to fulfill all the

postulates of Koch. In the hands of numerous investigators this diplococcus has been found to be a constant organism of scarlatinal infection. The work of Class certainly does not vitiate the position taken by Charlton in this paper—*i. e.*, that the streptococcus may cause some of the unfavorable symptoms of the disease. Nevertheless, the editor, with the knowledge gained by personal experience with the Class organism, must adhere to his belief that that organism is the essential cause of scarlet fever. The excellent paper of Jacques which was read before the American Medical Association brings the matter to date and gives succinct reasons for believing in the legitimacy of the Class organism.]

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

Nephritis as Indication for the Artificial Interruption of Pregnancy.—M. HOFMEIER (*Monatsschrift fuer Geb. und Gyn.*, October, 1902, Ergaenzgsh).—*Chronic nephritis* has a very unfavorable influence upon the condition of pregnant women. It often leads to the formation of edema, transudations into the abdominal cavity, into the pleura and the pericardium, and frequently terminates fatally after confinement. Danger of eclampsia is rather small. Of thirty-three cases of this category in the obstetric clinic of Berlin, eleven died from the effects of the nephritis, none from eclampsia, the fetal mortality being from 50 to 60 per cent. The author concludes: In cases of chronic nephritis pregnancy should be interrupted in the interest of the mother, if, despite a proper therapeusis, the secondary symptoms of the nephritis, such as edema or transudations, grow worse.

Kidney of pregnancy is in all probability due to toxic conditions. That kidney of pregnancy could transform into a chronic nephritis has never been proven. A proof that there was no lesion of the kidney previous to pregnancy is important but often difficult to establish. The danger of eclampsia is in this condition larger. The author concludes: In cases of kidney of pregnancy artificial interruption of pregnancy is indicated on account of the danger of eclampsia, if, despite a proper dietetic treatment, the symptoms become more unfavorable.

Acute nephritis occurring during pregnancy may, without interruption of same, disappear under appropriate treatment. In contradistinction to the kidney of pregnancy the urine here always contains blood. The author concludes: In cases of acute nephritis, artificial interruption of pregnancy is not indicated, because a cure is possible and artificial termination of pregnancy does not exclude the possibility of eclampsia during labor.

Internal Diseases as Indications for Artificial Termination of Pregnancy.—FRIEDRICH SCHAUTA (*Monatsschrift fuer Geb. und Gyn.*, October, 1902, Erggsh).—The writer bases his conclusions upon the observations made in 40,000 confinements. His paper deals in detail with almost all diseases which may necessitate or justify an interference with pregnancy. The most interesting of his deductions are the following: Psychoses justify interruption of pregnancy only if there is danger of suicide, diseases of the spinal cord or hysteria never do, epilepsy only in very severe cases. Among diseases of the eyes, retinitis albuminurica forms the most frequent indication. Pneumonia, pleuritis and pneumothorax should be considered contraindication for interference. In far progressed cases of pulmonary tuberculosis no benefit for the mother can be expected from an artificial interruption of pregnancy in the later months. More advantageous is artificial

abortion in the earlier months, especially in cases of tuberculosis of the larynx. In cases of incipient tuberculosis interference is indicated both in the interest of mother and child in later months, if the tubercular process is fast progressing. In hopeless cases of tuberculosis interference may be justified in the interest of the child as soon as it is viable. In miliary tuberculosis pregnancy should be interrupted as soon as the fetus is viable. Under proper care 95 per cent. of all pregnant women suffering from diseases of the heart pass during confinement without any disturbances. Complications of heart diseases with tuberculosis or nephritis impair the prognosis considerably. The least favorable prognosis is offered in stenosis of the mitral valve. Artificial interruption is in this condition justified if there is the slightest sign of disturbance of compensation. The prognosis of hyperemesis is more favorable than is generally believed. Only in very rare instances interruption of pregnancy seems unavoidable. Appendicitis requires immediate operation. Albuminuria and nephritis are indications for interference if dietetic measures do not bring improvement. In chronic nephritis pregnancy should be interrupted as soon as the fetus is viable or if grave complications occur. Diabetes gravidarum gives a very unfavorable prognosis; 25 per cent. of the author's cases died. Pregnancy should be interrupted in the earliest stage. The acute infectious diseases offer no indications for an interference with an existing pregnancy. Tumors, such as myomata, cysts, dermoids, etc., do not justify artificial interruption. The decision as regards dealing with cases of carcinoma of the uterus is made without consideration of the existing pregnancy.

Hysterectomy in Cases of Puerperal Infection.—H. Fehling (*Monatsschrift fuer Geb. und Gyn*, October, 1902, Ergaenzgsh).—The author arrives at the following conclusions from his own wide experience and a study of the literature: (1) The puerperal infections of the uterus are best divided into toxic and infectious. (2) The toxic processes (sapremia) are limited to the uterus proper. Infectious processes soon transgress the boundaries of the uterus and lead to severe general infections of the body. (3) Extirpation of the puerperal uterus in cases of a general infection (septicemia) is a hopeless operation and should not be performed. (4) From a theoretical standpoint hysterectomy can only be justified if the focus of intoxication or the infection is limited to the uterus, that is, in cases of disintegration of retained placental tissue, of decay of myomas after confinement or of other tissues after incomplete abortion, granted that these sources of infection cannot be removed in any simpler way. Thus it may be seen that the indications for hysterectomy are very limited. (5) In certain cases of metrophlebitis puerperalis (pyemia) hysterectomy may be beneficial, especially in combination with ligation and extirpation of thrombosed veins in the broad ligaments or the vena spermatica.

Hysterectomy in Cases of Puerperal Infection.—Th. Tuffier, Paris (Internat. Gynecolog. Congress, Rome, 1902; *Centralbl. fuer Gyn.*, No. 44, 1902).—The author suggested this mode of treatment in 1899. After considerable personal experience and a careful observation of all the cases recorded in literature, he holds at present the following views on this question: From a pathologic-anatomic standpoint there undoubtedly exist certain puerperal infections of the uterus which justify the extirpation of this organ. From a clinical standpoint, however, it must be conceded that there are no unmistakable symptoms which would conclusively indicate the operation in the given case. Only the general appearance of the patient and the course of the disease in the special case are decisive. If in a case of septicemia after confinement or abortion, a reasonable cause for the fever cannot be detected, either in the external genitalia or in any other organ of the body, if the usual mode of treatment (intrauterine douche,

curettment, injection of serum, etc.), prove ineffectual, if the uterine appendages and the peritoneum are intact, the uterus is found large and flabby, and if there is an offensive discharge from the vagina and the general condition of the patient allows such a severe operation, in the author's opinion panhysterectomy is indicated.

The most difficult problem in this connection is the question when should the operation be performed. "Too early operation is a crime, too late operation a reasonless procedure." The author performs the operation both *per abdomen* and *per vaginam*, according to the size of the uterus.

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

Buttermilk as Infant Food.—BAGINSKY (*Pediatrics*, November 15, 1902) reports results of feeding one hundred and eighty-two children in the medical wards of his hospital on prepared buttermilk. The buttermilk was made from pure cream, soured by means of bacteria, so that the fat is extracted to a minimum.

To one liter 15.0 to 25.0 of wheat flour and 35.0 to 50.0 of cane sugar are added. With constant stirring the mixture is allowed to boil up three or four times. It is then poured into bottles and kept cool until used. Analysis showed that such milk contains: fat, 0.35 per cent.; proteid, 3.4 per cent.; sugar, 4.2 to 5.7 per cent.; starch, 0.26 per cent., and, further, that it is strongly acid, due in part to the presence of lactic acid.

The low fat content is especially noteworthy. The amount to be given was based upon the number of calories previously determined as necessary for the requirements of breast-fed children. Average amounts for different ages are tabulated.

Of the hundred and eighty-two children one hundred and fifty did very well on the food. In many of the other cases various complications were present, and these children did not respond to any other method of feeding.

From his observations Baginsky concludes that:

1. Buttermilk prepared as directed is a good food for acute and chronically sick infants.
2. It is well borne soon after attacks of acute dyspepsia and summer diarrhea.
3. In chronic diarrhea and enteritis it may be looked upon "as a life-saving preparation."
4. More observations are needed as to its use as an actual food for healthy infants.
5. In cases where its use was long-continued no disturbances of nutrition, such as rickets or scurvy, were developed.

Bronchitis and Broncho-Pneumonia in Children.—MITCHELL (*Archives of Pediatrics*, November, 1902) says that prophylaxis is of the utmost importance. Many children are subject to recurring attacks of bronchitis (with constant danger of pneumonia).

Prophylaxis rests (*a*) upon building up the constitutional vigor; (*b*) upon isolation and pure air.

Ad a. Special diatheses, syphilitic, rachitic, strumous or lithemic should have appropriate treatment.

Adenoids and enlarged tonsils should be removed.

Ad b. Feeding, clothing, bathing and exercise should be carefully watched. Proper ventilation of the sleeping apartments is of prime importance. The child should get as much fresh air as possible, day and night. While prophylactic medicinal treatment is often needed, any drugging which interferes with the appetite or digestion should be avoided.

In the treatment of acute attacks the author has discarded the heavy poultice, substituting the cotton jacket.

The question of administration of alcohol must be decided by the individual case.

Antipyretics should *not* be used to control the temperature; baths begun at 100°, gradually reduced to 80°, are much better and not depressing.

The hot bath, according to the author, is the most valuable of all measures.

It should be given at 105° for 10–20 minutes every 3–6 hours, according to severity of cyanosis, dyspnea, or nervous symptoms.

Careful feeding is of much importance, and medication should not be allowed to interfere with digestion and nutrition.

For the control of cough, steam inhalations, simple or medicated, are of value.

Where the cough is harsh, dry and exhausting, opiates may be given.

In the subacute or chronic cases the creosote preparations, especially the carbonate of guaiacol, are valuable.

For heart stimulation strychnia may be used, though its use should not be too long continued, on account of the danger of overstimulation and consequent paralysis.

Tuberculosis in Infancy.—At a meeting of the German Medical Association (Section in Pediatrics) held at Carlsbad in September of this year, Professor Schlossman read a paper with this title. A report of the society proceedings is given in the *Jahrbuch fuer Kinderheilkunde*, vol. 56, Erganzungsheft, from which this abstract is taken. The author concludes that:

1. In infancy tuberculosis unassociated with other infections is seen in the majority of the cases.

2. In many cases the course is absolutely febrile.

3. In the majority of the cases, examination of the sputum (when it can be obtained), or of mucus obtained by wiping out the mouth, or by aspiration, contains *no* tubercle bacilli. In the feces, bacilli can occasionally be demonstrated.

Sometimes inoculation of the mucus from the mouth gives positive results in guinea-pigs, even where no bacilli can be found.

4. The only absolutely sure diagnostic aid is tuberculin.

With proper precautions this is perfectly safe.

5. Primary tuberculosis of the gastro-intestinal tract (mediastinal glands and intestine) has never been observed by the author, and he questions whether it ever occurs. The diagnosis cannot be established macroscopically. It must always be made microscopically or by animal inoculation.

6. The gastro-intestinal tract of nurslings is not easily infected. Enormous numbers of tubercle bacilli are necessary to infect stomach, intestines, or mesenteric lymph nodes

7. Infection of the mesenteric lymph nodes need not be secondary to infection of the intestine, but can occur by way of the lymphatic circulation from primary infection of the bronchial glands.

8. The bronchial glands are usually affected early, though they need not be the primary seat of infection. This may at times be found in the tonsils and in the naso-pharyngeal mucosa.

9. Course is usually subacute, cavity formation not being rare. Tubercular meningitis and tubercular disease of the bone are rarer.

10. *In every case* of tuberculosis in infancy careful investigation will show

that the infant has been in close personal contact with a tubercular patient. *Tubercular infection from milk plays absolutely no role* in the etiology of tuberculosis of infancy in Germany.

[The abstract has been given somewhat *in extenso*, because the views advanced differ materially from those held in this country. In the discussion which followed the reading of the paper, the views of the author were generally concurred in. It is noteworthy that several leading pediatrists, among them Escherich, agreed that infection from milk was "extraordinarily rare." The preponderance of opinion was that the tuberculin test, made with proper precautions, was perfectly safe, and a valuable diagnostic aid.—ED.]

Gastro-Intestinal Diseases in Infancy.—TRUMPP (*Wurzburger Abhandlungen aus dem Gesamtgebiet der Praktischen Medizin*, Heft. 3, No. 1).—In this short monograph the author summarizes modern German views on some of the more common of these affections.

He shows that the explanation of many of the conditions frequently present is to be found in the anatomical structure of the infantile parts. The importance of bacterial infection in infancy is very great. Breast-fed children are less often affected than the artificially fed, partly because the mother's milk contains protective substances (of the alexine group) which confer more or less immunity in the child.

While the direct digestive processes go on with comparative ease, in even very young children, assimilation (internal digestion) is often interfered with, because of lack of functionating power in those glands with internal secretion, whose activity regulates body metabolism (thyroid, pancreas, adrenals).

This explains some of the difficulties of artificial feeding, because of the difficulty of assimilation (not of digestion *per se*) of the artificial foods, in which class cow's milk must be placed.

It is to be remembered, however, that cow's milk has a great affinity for the free HCl in the infant stomach. The casein could be digested by the lactic acid always present, or as a result of the activity of the trypsin ferment in the intestine. But the absence of free HCl in the stomach allows bacterial infection and putrefaction to go on the more readily. This bacterial infection is to be considered as ectogenous (where the bacteria are brought into the alimentary tract from without) or endogenous (resulting from perverted activity of germs already within the canal). Ectogenous infection occurs when, either through functional or anatomic disturbances of the digestive apparatus, the chemism of digestion is interfered with, so that culture media are given for the development and pathogenic activity of germs already within the canal, or of germs brought in from without.

It is thus possible to have secondary endogenous from primary ectogenous infection.

A third possibility of infection is by direct transmission by the nurse or utensils or the like from one child to another.

This form is naturally most often seen in institutions. Practically, any of the germs pathogenic for man may produce enteritides of this sort. The author recognizes:

1. Dyspeptic affections (*a*) with excessive acidity; (*b*) with hypacidity.
2. Catarrhal affections.
3. Inflammatory affections (acute).
4. Chronic affections, including secondary infantile atrophy.

With reference to treatment, he insists upon the importance of prophylaxis, laying special emphasis on the need for scrupulous cleanliness, especially in the case of artificially fed infants.

He is convinced of the value of peptonized milk as a food in many cases, and has also seen good results from the use of buttermilk. Treatment otherwise is that usually recommended.

ORTHOPEDICS.

IN CHARGE OF

MALVERN B. CLOPTON, M. D.

Some of the Orthopedic Conditions of the New-Born Demanding Early Surgical Treatment.—CHARLES F. PAINTER (*The Boston Medical and Surgical Journal*, September 11, 1902).—Leaving to nature the correction of many manifest defects in this author's opinion is a practice too commonly followed by all classes of physicians. He cites clubfoot, a common congenital deformity, as being especially amenable to early treatment. Frequently pulling the foot to the valgus position and applying the proper brace and straps should correct the deformity as early as the third or fourth week; but the use of the brace and straps must be continued for several months and the manipulation for a year or a year and a half. When walking is begun, shape the shoe-soles so as to favor the valgus position.

Flatfoot demands no attention until the child begins to walk, and then by slightly raising the inner side of the shoes worn a cure is easily effected.

Congenital dislocation of the hip, he says, usually goes unrecognized until walking is attempted. In many cases treatment avails little. Ankylosis of the hip is a frequent result when the open incisions are done, and a recurrence of the dislocation is more frequent following this operation than when the bloodless method is practiced. The latter is to be preferred and the attempt at the reduction should be made near the end of the third year.

Hematoma of the sterno-mastoid, which probably is mechanical and not due to syphilis, as has been supposed, gives rise to torticollis as its principal symptom. Manual correction is all that is necessary.

In spastic paraplegia treatment combating the tendency to contractures should be begun early and persisted in through the entire growing period.

Obstetrical paralysis should be treated early with a bandage to overcome the characteristic deformity, then after the first few months massage and electrical treatment should be begun, and then later active and passive muscular exercise added. This is always due to injury of the brachial plexus, but congenital and traumatic dislocations have been mistaken for it.

Harelip should be operated on during the first year, but the cleft palate operation is better done by waiting until such a time as an obturator can be fitted.

Hernie that occur during the first year can usually be permanently cured by a truss. Anyway, if the truss is controlling the sac defer the operation when it is necessary until the fourth or fifth year.

Congenital absence of tibia or femur is referred to as being simply a question of mechano-therapeutics, and unclosed bronchial clefts as purely surgical. The results of operative interference in spina bifida and meningocele have been poor.

Genito-urinary defects, such as exstrophy of the bladder and epi- and hypospadias, require early surgical treatment. Many repeated operations will be necessary, but the final results are gratifying.

Fixation the Essential of Treatment for Tubercular Joint Disease.—EDWARD A. TRACY (*Pediatrics*, November 15, 1902).—Attention is called to a paper presented by the writer at the fifty-first meeting of the American Medical Association in the section of children's diseases, in which, in marked contrast to the teachings of other American orthopedists at the time, he advocated fixation as the prime requisite in the treatment and considered traction necessary only

for the purpose of overcoming spasmodic contractions of the muscles. He criticises a recent article of Young's, of Philadelphia, on several points, but particularly for indefinitely condemning all other methods of treatment except traction. Fault is found with another writer, Lovett, for not ascribing to the fixation the good result obtained by the use of a certain hip splint which he described in an article published.

He thinks that for many reasons wood plastic should be the chosen material in fixation, chiefly though because it can be applied directly over the skin, thereby really fixing the part. No real fixation is obtained when plaster of Paris is used with the lint primarily swathed in cotton.

Three cases are reported that were treated in the manner he supports. One a boy, aged four and one-half years, in whom the metatarsal joints about the cuboid bone were involved. Another, aged six years, with involvement of both knee-joints, and the third one, aged eleven years, with hip-joint disease.

In each of them the cure was complete.

The Prevention of Deformity.—Wisner R. Townsend (*Journal of the American Medical Assoc.*, September 11, 1902).—Notice is directed to the laxity of attention by the medical profession to this subject, the prevention of deformity, in comparison with the activity along so many lines in preventive medicine. He affirms that at least half of all the deformities we meet could have been prevented; that practically all due to poliomyelitis, and the majority of the cases of non-congenital clubfoot and the serious clubfoot which often results from a slight congenital one, could with care and simple treatment be obviated. He urges a conception of the possible deformities following treatment of chronic joint diseases, following burns, following operations upon bones and muscles, of those due to a faulty position in bed in any prolonged illness, of those due to synovitis, rheumatism, septic conditions of soft parts or articulations, etc., and of those due to the faulty position maintained by many in their ordinary avocations, and a bringing to bear of means and procedures by the profession to prevent.

Report of a Case of Claw-Hand Resulting from Compound Fracture of the Forearm; Cured by Operation.—H. P. H. Galloway (*Canadian Journal of Medicine and Surgery*, November, 1902).—The case reported is that of A. B., aged eighteen years, who, when a young child, suffered a compound fracture of the right forearm, from which he recovered with firm union and without deformity or loss of function. But later there came a gradually increasing difficulty in extending the fingers, until finally when the patient came to him, July 1, 1901, extension with the wrist in line with the arm was impossible. When the wrist was flexed the fingers could be extended, showing that the condition was due to a shortening of the flexor tendons of the fingers. The thumb was not involved. Through a longitudinal incision three and a half inches long in the middle of the lower part of the anterior surface of the forearm the flexor tendons of each finger were transfixed, split for one and a half or two inches, and then at either end of this incision the knife was made to cut its way out through the tendons upon opposite sides. The proximal and distal portions of the tendons were drawn past each other far enough to permit the fingers being straightened with the wrist extended and in this position sutured. As a result of lengthening the tendons in this manner, within six weeks the patient could write legibly and had a fairly firm grasp, and now at the present date the condition is all that could be desired, the fingers being practically straight and the function of the hand perfect.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

A Case of Ophthalmic Goitre Presenting Some Unusual Features.—C. S. POTTS (*Phila. Med. Jour.*, November 22, 1902) reports a case of a man, thirty-nine years old, who, in addition to most of the usual symptoms of exophthalmic goitre, showed a marked ankle clonus, which disappeared as his condition improved, and suffered from attacks of complete unconsciousness. Marked improvement followed the use of sodium phosphate and the treatment of a chronic hypertrophic rhinitis. Oppenheim, while he does not specify the possible existence of an ankle clonus, says that the deep reflexes may be increased or diminished. This case would seem to show that we may have a well-developed ankle clonus present in cases in which there is not organic disease of the cord. It is not thought probable that in this case the clonus was of hysterical origin, although evidently due to some functional disturbance of the cord, probably caused by the poison of the disease.

Treatment by the Tourniquet to Counteract the Vasomotor Spasm of Raynaud's Disease.—H. CUSHING (*Jour. Nerv. and Ment. Dis.*, No. 11, 1902).—An ingenious method of treating the vasomotor spasm in this disease is here described. The patient, a woman of thirty-five, presented the usual symptoms of Raynaud's disease, with marked arterial spasm, associated with great pain. For several months a condition of local asphyxia of all the digits had been present, with exacerbation of almost daily occurrence. On several occasions these attacks were so severe that slight superficial patches of terminal gangrene had affected the pads on one or more of the toes and fingers. A flat rubber bandage is applied to the extremity early in the course of the arterial spasm. On its removal after one or two minutes' application a bright flush of the extremity follows, with increased surface temperature. The vasomotor relaxation lasted only a short time, but the patient experienced a sensation of considerable relief. The tourniquet is applied daily, according as one or another extremity becomes affected. The treatment by this method is most simple of application, and from its apparent success in this instance deserves further trial. It depends, seemingly, in principle upon the physiological blocking effect of the elastic constriction on the peripheral vasomotor nerves. The treatment has its limitations, and is not applicabla to a case where vascular spasm affects territories other than those confined to the extremities.

The Mental State of Czolgosz, the Assassin of President McKinley.—WALTER CHANNING (*Am. Jour. of Insanity*, No. 2, 1902).—The interest in the medico-legal aspect of the assassin of President McKinley has not abated since his execution, nor has the fact of his sanity or insanity been definitely settled, although his trial and execution have legally ended the case. This study by Channing is by far the most noteworthy contribution that has as yet appeared on the subject, and it merits attention, especially on account of its possible application to such problems as may in the future arise. Most of the matter presented in this paper bearing upon the history of Czolgosz before the crime, and his family, is new. This material was personally collected by the author and his assistant in Cleveland and other places. The paper goes into great detail in the matter of the personal history of Czolgosz's family and their relations to him previous to the date of the assassination. The personal and the clinical history

of Czolgosz is also carefully investigated in the light of the new data which the author of this paper has been able to collect. The following conclusions are noted as the result of this careful and painstaking investigation:

"(1) I feel that, from fuller information than that possessed by these experts who examined Czolgosz after his crime, the opinion then expressed by them cannot be accepted as the final one. (2) Owing to lack of time it was impossible in the examination referred to, to investigate the early history of Czolgosz. Had this been done, some of his statements would have been found to be inaccurate. (3) He was not, in my opinion, an anarchist in the true sense of the word; and while anarchist doctrines may have inflamed his mind and been a factor in the crime, it was not the true cause or an adequate explanation. (4) He had been in ill-health for several years, changing from an industrious and apparently fairly normal young man into a sickly, unhealthy and abnormal one. (5) While in this physical and mental condition of sickliness and abnormality, it is probable that he conceived the idea of performing some great act for the benefit of the common and working people. (6) This finally developed into a true delusion that it was his duty to kill the President because he was an enemy of the people, and resulted in the assassination. (7) His conduct after the crime was not inconsistent with insanity. (8) His history for some years before the deed, the way in which it was committed, and his actions afterward, furnish a good illustration of a typical regicide or magnicide as described by Regis. (9) The post-mortem examination threw no light on his mental condition, and would not invalidate the opinion that the existing delusion was the result of a disturbed brain action. (10) Finally, from the study of all the facts that have come to my attention, insanity appears to me the most reasonable and logical explanation of the crime."

Tabes Dorsalis and Aortitis—ARULLANI (*Rev. Neurolog.*, October 30, 1902).—The occurrence of aortic disease with tabes dorsalis has long been recognized. This report is based upon a material of sixty-eight cases, of all ages and severity. In the majority of tabetics the heart and the aorta can be said to be abnormal. The most pronounced abnormal sign is the increased frequency of the heart rate and the augmentation of the second sound at the right of the sternum, an evident sign of the dilatation of the aorta. Forty cases in the above series have shown evidence of aortitis, sometimes very well marked. Among them were eleven cases of insufficiency and two aneurisms. The author concludes as follows:

"Aortitis is very frequent among tabetics, more so than has been commonly believed. The examination of the heart and the blood vessels should be very carefully made. The aortitis explains very well the cardiac trouble found so frequently in tabetics. The commonest lesion is an aortic insufficiency. This insufficiency is almost always relative. The frequent appearance of aortitis in tabes explains also the occurrence of aneurisms. That syphilis is an important etiological factor in the causation of the heart and blood vessel lesions is as well proven as that syphilis is an important etiological factor in the lesion of the central nervous system."

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

Some Special Points Upon the Microscopic Characters of the Prostate and the Bladder of Old Men.—IASTREBOFF (*Ann. des Mal. des Org. Genito-Urin.*, October, 1902).—According to Motz, the principal cause of dysuric manifestations with old men resides, in the first place, in feebleness of the bladder, and, in the second place, in congestion of the urinary apparatus. To find a reason for this feebleness and congestion the author has made some microscopic researches upon the prostate of forty subjects, aged more than fifty years, among whom eleven had presented during life difficulties of micturition, under the form of frequent desires to urinate and temporary urinary retentions. Elastic fibres penetrate, under the form of a thick network, the connective interstitial tissue of an organ, and form a solid membrane around the capillaries circulating in the interior of the tissue; on the one hand protecting them against pressure from the tissue, and on the other preventing their exaggerated dilatation before the augmentation of the blood pressure and contributing to regulate the more active circulation of the blood current. It is due to this action that the volume of the organ is maintained in its normal state.

From the author's researches he is convinced that the microscopic structure of the prostate of old men presents very great variations, and that it is absolutely impossible to define a general type of structure for the senile prostate. Nevertheless, in a great number of cases there is an abundant development of intermediary tissue, with a predominance of conjunctive tissue, to the detriment of the glandular tissue. He has observed a very clear diminution in the quantity of elastic fibres in the senile prostrate as compared with that in the prostate in the normal youth; also the degeneration of these fibres and their complete disappearance. The disappearance of the elastic fibres in the conjunctive tissue of the prostate of old men, together with the dilatation of the veins in the glandular parenchyma, favor the congestive state of this organ which accompanies its increase of volume and augments the obstruction to micturition. The primary weakness of the bladder in the dysuria of old men resides in a quantitative diminution of the anatomical elements; be it in the atrophy of the muscular elements and their disappearance, or in the degeneration of the elastic fibres, allowing dilatation of the veins and thus a congestive state of the bladder. These two processes, that is to say, atrophy of the muscles and disappearance of the elastic fibres, go hand in hand, are evidently influenced by the age of the patient, and become more pronounced if in addition to age there is added a chronic affection of the bladder or a passive dilatation of its cavity following repeated urinary retention, voluntary or involuntary, in consequence of untimely or insufficient evacuation of the bladder. Repeated retentions have finally an extremely harmful influence upon the function of the bladder, particularly with aged subjects, with whom the power of regeneration of the tissue is remarkably diminished.

Ligation and Clamping of the Ureter as Complications of Surgical Operations.—SAMPSON (*Amer. Med.*, November 1, 1902).—In this excellent expose of the subject the following observations of value to the genito-urinary surgeon may be noted: Ligature about a ureter, if removed before the close of the operation, will probably not have injured the ureter, while the clamp is more liable to give post operative signs of injury. Operative interference with the blood supply of the ureter is more harmful than either clamping or ligating it. Complete occlusion of the ureter, in the absence of infection, leads to atrophy with more or

less dilatation of the ureter and pelvis of the kidney. Ligature is less likely to cause marked hydronephrosis or pyonephrosis than uretero-ureteral anostomosis. Ligature is justifiable only when anastomosis is impossible, but may terminate fatally (*a*) when renal insufficiency exists, (*b*) when there is profund shock, and (*c*) when the knot slips, or the material is absorbed or in some way allows leakage. Catheterization of the ureter preliminary to certain pelvic operations is a great aid.

Strictures of the Male Urethra.—GREENE (*Medical News*, October 25, 1902).—The author gives the following conclusions:

1. Careful treatment of chronic urethritis will prevent the formation of stricture.

2. True stricture is of slow growth and can generally be best treated by a prolonged passage of sounds, and proper treatment of any complications coexistent with it.

3. Cutting operations are not now required in strictures which have not been previously incised. Strictures once incised, unless kept open, are liable to require further incision.

4. Incision being necessary, it is best to do an external urethrotomy, combined with an internal urethrotomy if required.

The Therapeutic Employment of Adrenaline in the Urinary Tract.—BARTRINA (*Ann. des Mal. des Org. Genito-Urin.*, November 1, 1902).—It would seem that in hemorrhages from the bladder, due to such a cause as a benign growth, adrenaline would be of much service, but from the experiences of the author he is led to regard it as only palliative and of no practical service as a curative agent; for its hemostatic action continues for two hours only, after which the hemorrhage renews itself with equal, if not increased, intensity. This hemostatic, however, is of much service for making a differential diagnosis between kidney and bladder hematuria, for, if after a vesical instillation of adrenaline, the urine that we get from time to time remains clear or considerably clear, we can be quite sure of a vesical hematuria. Also in making cystoscopic examinations of a bleeding bladder, adrenaline can be of use in preventing the hemorrhage which is often such an impediment to a satisfactory cystoscopic examination. Albarran has employed it for the purpose of facilitating a cystoscopic examination, as it diminishes the local sensibility of the patient, and prevents the slight bleeding of the deep urethra which in some cases soils the prism of the instrument.

But it is in strictures of the urethra that the author has made special studies of its use, and has obtained the most striking results. In these cases congestion and spasm are the two factors which, added to the lesion, offer such an impediment to the passage of an instrument. Adrenaline very promptly so reduces the congestion and relieves the spasm that a stricture which, before its employment was impassable, becomes easily passable after its use. The strength of the solution used is one to a thousand.

Urine From Each Kidney.—VALENTINE (*Medical Record*, October 25, 1902).—Ureteral catheterism, indisputably the best, has its limitations, and also a goodly number of opponents. For it the bladder must have a capacity of at least 50 c.c., must not be a bleeding bladder into which one or the other kidney is pouring blood too rapidly for the irrigating cystoscope to wash away, the bladder walls must not be desquamating large shreds, and the ureters must be large enough to admit the smallest catheter, besides other conditions evident upon a moment's thought.

Ureteral catheterization demands continual practice, greatest possible skill, acute vision and most delicate manipulative tact. For this reason segregation occupies a distinct place in urology. Harris' and Downes' instruments for segregation are founded on the principle of the water-shed, and present distinct

inconveniences when used upon the male. Cathelin's method which is here fully described by Valentine is considered by him to possess decided merits. [Cathelin printed a description of his instrument in the *Presse Medicale* (No. 48, June 14, 1902), and has given the details of his technique and his principal results in the *Ann. des Mal. des Org. Genito-Urin.* (July, 1902)].

The principle of the instrument is based upon pushing into the bladder a soft rubber membrane which adapts itself to the wall, and which is grasped by the bladder, thus dividing the viscus into two halves.

The Purposes of Ureter-Catheterism.—Lewis (*Jour. A. M. A.*, November 8, 1902).—The purposes of ureter-catheterism in connection with the cystoscope are twofold: for diagnosis and for treatment. After enumerating its uses in diagnosis and treatment the author describes and illustrates his own instrument, and has this to say in regard to it as compared with the methods of segregation: That its advantages over segregation are very great. In the matter of diagnosis if one uses the segregator and gets tuberculous urine, for instance, from one side, and clean urine from the other side, he is still unable to say just where the tuberculous urine comes from—whether it comes from the bladder on that side, or the ureter on that side, or the kidney pelvis on that side; whereas if he catheterizes both ureters and gets tuberculous urine from one side, he knows that it does not come from the bladder on that side. If he runs the catheter up to the kidney pelvis, he knows that it does not come from the ureter, but does come from the kidney pelvis, or kidney itself on that side. So that the segregation method is a very inferior method as compared with ureter-catheterism. Of course, one cannot do anything in the way of treatment of the ureters or kidney pelves by the use of the segregator, such as he can do by the use of ureter-catheterizing methods.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

MARTIN F. ENGMAN, M. D.

Radiotherapy—Abstracts of Remarks Made by Various Members of the American Dermatological Association Upon X-Ray Therapy, at the Last Meeting of the Association, Held at Boston in September, 1902.—(*Boston Med. and Surg. Jour.*, November 13, 1902.)—Dr. Allen's conclusions were as follows:

1. The X-ray possesses decided therapeutic power and may produce marked injurious effects.

2. From the study of the present series of cases, the writer feels warranted in stating that the X-ray, as a therapeutic measure, is not a passing fad to be dropped after a brief experience.

3. The effect of the method is at times to produce severe symptoms, referable to the heart, lungs or other internal organs, and systemic effects pointing to absorption of products of disintegration thrown into the circulation more rapidly than they can be eliminated.

4. Metastases occur in grave forms of cancer at times much more suddenly than we are accustomed to see in patients not so treated.

5. Cancer itself may follow the injurious effects produced by the ray in a person not known to be predisposed, as instanced in the case reported of the tube-maker whose arm was amputated for carcinoma developing in an X-ray burn cicatrix.

6. The X-ray dermatitis or burn, and many of the good effects as well, depend largely upon the proximity of the tube and the degree of heating of the anode.

7. Tubes at times get into what might be termed a "burning state," and a number of patients may suffer in succession. This condition of the tube must at present be learned by experience, as there is nothing to indicate just when it is so.

8. The method is not one to be solely relied upon in all forms of cancer.

9. In nodular, wart-like and dry growths upon the skin, other means of removal, preferably arsenical paste, should first be employed and the rays then applied.

10. It is not a method that should be employed by electricians or unqualified persons. The manufacturer of strychnia is not the one to whom the administration should be trusted.

11. The indiscriminate application of the ray to all forms of disease, as claimed to be practiced in advertising institutions and by charlatans is apt to bring much unmerited criticism on a really useful method, whose effect is at times almost magical, but most often disappointing.

RADIOTHERAPEUTIC OBSERVATIONS.

Dr. J. Zeisler, of Chicago, the reader, gave the result of his experience in the treatment of various affections of the skin by means of the Roentgen rays. Among the skin lesions treated were the following: Lupus vulgaris and erythematosus, scrofuloderma, hypertrichiosis, sycosis, acne and lichen planus. Also a number of cases of epithelioma and three cases of psoriasis. On the whole, the results obtained were very favorable, and the author stated that his experience with radiotherapy had made him an ardent advocate of that method of treatment. He advised the use of the coil in preference to the static machine.

Dr. C. W. Allen said he had used the static machine almost exclusively, and with entirely satisfactory results.

Dr. A. R. Robinson, of New York, said that in regard to the treatment of sycosis by means of the X-ray, the trouble was that there was some danger of producing permanent alopecia. The speaker said he used the static machine, and thought it was just as good as the other. In regard to the treatment of epithelioma, excepting those situated near the eye or in the region of the blood vessels in the neck, he preferred the use of the curette or caustic, to the X-ray. He mentioned one case of very superficial epithelioma which had been treated every day for two months by the X-ray without much effect, and which was finally cured in two minutes by a caustic application.

Dr. William T. Corlett, of Cleveland, spoke in favor of the use of the soft tube in X-ray work.

Dr. Pusey, of Chicago, said the selection of a tube was largely a matter of choice. The whole point in the technique is to obtain sufficient X-rays to get a reaction without getting a dangerous reaction.

Dr. Stelwagon, of Philadelphia, said that in cases of rodent ulcer in accessible regions he was in favor of making a caustic application, and then supplementing this by the X-ray as the part begins to heal. He has used a static machine with very satisfactory results.

Dr. J. C. White, of Boston, reported a case of carcinoma of the skin developing at the site of a prolonged X-ray dermatitis.

Dr. Sherwell, of Brooklyn, said that while he appreciated the value of the X-ray, he did not think it should entirely supplant the more radical methods in certain cases. He has used the acid nitrate of mercury in hundreds of cases of epithelioma with entire statisfaction, both to the patient and himself.

Dr. F. H. Montgomery, of Chicago, said he thought there was no question that superficial forms of cancer disappear under the application of the X-rays. For the diffuse and generalized forms, there is no other treatment equal to it. For the localized, superficial lesions there is no reason why the knife or caustic

should not be employed, and there is a certain element of safety in supplementing this treatment with the X-rays.

Dr. D. W. Montgomery, of San Francisco, referred to the slight scarring left by the X-ray treatment, which he thought was a very desirable factor in lesions on the face.

The Action of the X-Ray and its Uses in Therapeutics.—Wm. B. Snow, M. D. (*Jour. of Advanced Therapeutics*, November, 1902).—It matters little what is the source of the current which energizes the tube, so long as it excites the character of the ray applicable to the tube at hand. For deep-seated growths tubes of very high vacuum are required, and as a static machine can excite such a tube with less risk to its life, it is preferred to a coil in such cases. Tubes of low vacuum are only efficient in superficial cases; however, they are not superior to tubes of high vacuum for the same cases.

The characteristic effects of the rays upon living tissue following a prolonged exposure or series of short exposures are: (1) Induction of impaired nutrition marked by alopecia and atrophy of the cuticle; (2) irritation evidenced by an itchy sensation; (3) inflammatory action, marked by tanning dermatitis or deep necrosis, the latter followed by sluggish reaction and retarded restoration. The inflammatory reaction depends upon length and frequency of exposures, character of the ray and idiosyncrasy of patient; (4) the rays destroy some forms of germ life most probably by rendering the pabulum unsuitable for growth; (5) the effect upon normal tissues is first to stimulate normal action due to the vibratory effects of the rays or of the ether in the presence of the rays; (6) short exposures induce activity of normal tissue cells, which in some cases, supplant abnormal tissue elements, without showing evidence of disintegration; (7) longer exposures destroy the abnormal tissue elements of low vitality, but do not seriously effect normal tissues unless the exposures are too prolonged; (8) abnormal tissue elements thus exposed break down and disappear through the natural channels of absorption or sloughing; (9) when tumors of considerable extent are rayed, rarely, if ever, over small tumors, a marked reaction occurs, with fever and varying degrees of prostration, and in a recent case of cancer treated by the author a severe diarrhea followed the sixth exposure—it is probable that this reaction arises from breaking down of devitalized tissue and autoinfection, which is often marked during the sloughing process; (10) X-ray causes in the deeper structures, as well as the skin, contraction of the muscular coats of the arterioles, relieving congestion and the consequent pain, as well as diminishing hemorrhage in some diseased conditions.

Radiotherapy—Remarks by Dr. Wm. J. Morton Before American Electro-Therapeutic Association, September 2, 1902.—(*Jour. of Advanced Therapeutics*, November, 1902).—Dr. Morton thought the X-ray treatment was the most important subject that had ever come before this association, and that it would remain an important subject for a long time to come. So far as his experience had gone in the practice of medicine, both medical and surgical, he had learned that there was no more important adjunct to the therapeutics of disease than the X-ray, if one excluded anesthesia. Many might contend that there was a rivalry between the X-ray and the knife, but this he believed would soon be settled by increasing experience. It was well known what the knife could do, but the question was: What could the X-ray offer which would detract from the recognized procedures of surgery? He had been deeply interested in the paper, but it was so comprehensive that it was difficult to discuss it. He was a little disappointed to see any other method of treatment employed in conjunction with the X-ray, and was sorry that the brush discharge had been employed in this way, because it was most important to know what did the work, the brush discharge or the X-ray. A prominent practitioner in London was now claiming to cure consump-

tion by high potential discharges, and another very prominent practitioner in that city claimed that the curative results obtained from the X-ray tube were from the ordinary electricity and not from the X-ray. Much time had been wasted in discussing whether coils or static machines were employed. He employed both constantly, and it seemed to him entirely immaterial which was used; the X-ray seemed to him to be the same regardless of the source. We would probably soon have a means of measuring the intensity of the X-ray, and with an X-ray of a given intensity he saw no reason for expecting any different effects from such X-ray whether produced by a coil or by a static machine. The coil was not harder on the tube than the static machine. He had had two high tubes which could not be actuated by powerful static machines, and yet could be easily excited by a coil—a manifest advantage. He tested the tube with the fluoroscope at a distance of two feet, and determined whether he could get a good result through the wrist or through the thorax. In this way he found that, except with the high tube, he could not get a view of the deeper parts. The action of the X-ray should be sufficiently intense to reach the part which it is desired to treat, hence, the scientific and careful observer was forced to make use of high tubes for the treatment of many cases because otherwise there was no guarantee that the X-ray reached the desired part.

With regard to the action of the X-ray on living tissue, he thought we knew nothing whatever about it at present. The physicists were floundering about, and the pathologists were far from agreed as to what was the nature of cancer. At the present time, therefore, our knowledge was wholly clinical. He had found it an exceedingly grave responsibility to determine whether or not he should accept cases of cancer for X-ray treatment. If a surgical operation offered the best chance, it would certainly be culpable to treat such a case by means of the X-ray. The superficial cancers, particularly of the face, could be almost invariably cured without the knife, caustic pastes, or mercurial cataphoresis. All of these other methods remove tissue in bulk, both healthy and diseased, and the amount to be removed was entirely decided by the operator. On the other hand, the X-ray had the power of influencing diseased tissue wherever found. If the X-ray could cure the affected lymphatics and the primary carcinoma, then, of course, it had cured thousands of unknown foci. What paste, what mercury, and what scalpel would do this? If this were the truth regarding the action of the X-ray, then a wonderful advance had been made in the treatment of cancer. He thought most of those working in this field would admit that this was the truth. He was of the opinion that many had erred in using the screen. It was the device of the timid operator to prevent certain parts of the body from being burned. He had, in his own practice, practically discarded the use of the screen. The mere fact that a small carcinomatous area might develop in a few days into a rapidly spreading infection, or might already be spreading, showed the need of treating the parts widely. He would not, for example, treat a tumor of the axilla without also treating with the axilla the entire thorax, both front and back. He only used a screen at the present time to protect the hair and eyes, and for this purpose he used one made of tin foil. It was possible, he would admit, with the X-ray to cause the hair to fall out, yet with proper precautions he thought it more probable that the X-ray would make the hair grow better. The tube should be kept moving from one part to another. The abandonment of the screen, the wide treatment of the patient, and the frequent moving of the tube were, in his opinion, important adjuncts in the X-ray treatment of cancer. It was well to remember that it often took a long time to cure cases of cancer by the X-ray. He had had a large and encouraging experience with lupus and rodent ulcer of the face, but the results would be reported later.

A little patient had come to him from St. John, New Brunswick, with a very bad acne of the face and extensive scarring. The diagnosis had been confirmed by Dr. G. H. Fox, and then he had begun the treatment with the idea of

burning as much as he dared. This treatment had been kept up for about six weeks. Finally the burn extended into the true skin, and the latter peeled of five times. The eyebrows did not fall out. After about four weeks of desquamation the face began to resume its normal color and the cure was absolutely perfect, the skin being soft like that of a babe. Although the result was so satisfactory he did not feel like assuming the responsibility of treating another case in this way. A case of carbuncle had taught him that in all inflammatory tissue about to break down into pus the application of the X-ray would cause a rapid breaking down. In this connection it was well to say that he had treated a case of chronic appendicitis successfully, but for the reason stated had hesitated a good deal about using this treatment in an acute case. A case of fibroid tumor that he was now treating had acted exactly in the way described by Dr. Gibson. Cases of scrofulosis could be very satisfactorily treated with the X-ray, the enlargement of the glands being reduced to a small kernel.

He had been asked to say something about the treatment of carcinoma situated deeply in the abdomen. The great trouble in these cases was that the tumor did not remain a local one for any length of time. His experience had been chiefly with cases upon which operations had been attempted, and then the X-ray called in as a last resort. From such cases it was not fair to draw any inferences as to the value of the X-ray in this class of cases. In many of the cases so operated upon it would be found that there had been an enormous distribution of cancer throughout the omentum and perhaps the liver, and it was because of this rapid and extensive cancer infection that it did not seem probable to him much good would result from the application of the X-ray. He had never yet seen any case of cancer that had not improved under the X-ray treatment; all had undergone more or less retrogression.

In conclusion, the speaker quoted Talleyrand's view of women—*i. e.:* "We can't get along with them and we can't get along without them," and added that just at the present time the X-ray could not get along well with the operating surgeons and could not get along well without them. Some of the more limited cases of cancer could be treated by the X-ray until only a small nucleus was left, and then it seemed wise to do a minor operation to complete the cure. This, he thought, would be the final settlement of this important subject. A very prominent surgeon of New York City, speaking of a case of cancer of the breast which had been referred to Dr. Morton for X-ray treatment, said, under date of August 21st, that he would regard it as a very important fact if the lymphatics had become normal to the touch under the treatment. This surgeon added that he was an absolute pessimist regarding the curability of such cases by surgical operation, and only operated, with that object in view, out of deference to current opinion.

In answer to questions, Dr. Morton said that he treated cases of epithelioma of the tongue by stretching the patient's neck back across the head-rest of a dentist's chair and applying the X-ray. He had treated nevus by applying the X-ray through an aperture in a lead screen.

LARYNGOLOGY AND OTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER, M. D.

Ozone in Chronic Middle-Ear Deafness. — STOKER (*The Lancet*, November 1, 1902).—The effect of oxygen, or more particularly of its allotropic form, "ozone," in restoring a healthy condition to diseased nasal mucous membrane, led the author to experimenting with the latter in chronic progressive deafness or what is known as "chronic dry catarrh of the middle ear."

The ozone was generated by means of an electric current acting on a Ruhmkorff's coil to which the ozonizing tube was attached. The ozone so generated was pumped into the middle ear through an eustachian catheter for about three minutes, from twice to four times a week,

The histories of four cases are given. In all the hearing was considerably improved, and the tinnitus disappeared after a few treatments. In none were the applications made more than twelve times. The author believes that if the applications could have been made daily and continued for a longer time, the results would have been even better

Observations on Anesthesia of the Drum Membrane.—MCAULIFFE (*New England Med. Jonrnal*, November, 1902) gives some facts on anesthetizing the drum membrane, and cites the conditions favorable to the application of cocaine, as follows:

(1) The removal of foreign substances and loose scales from the drum membrane and canal.

(2) Dehydration of the outer layers of the membrane—a desiccation which causes molecular contraction and interstices, through which the anesthetic can reach the deeper parts and nerve terminations.

(3) The induction of endosmosis.

He meets the first condition by using hydrozone, which is subsequently mopped out with cotton. "The second and third conditions are met by the use of alcohol and aniline oil" in equal parts, containing five to twenty per cent. of cocaine. Anesthesia results in from ten to fifteen minutes.

The disadvantage of the solution is that the aniline oil is toxic and obscures the field. The toxicity can in a great measure be prevented by not filling the canal with the solution, as is usually done, but by simply mopping it on the drum with a small wad of cotton. In this way the field is also less obscured. The author has also experimented desultorily for the last six years with tubal injections of cocaine to desensitize the drum membrane. He applies the anesthetic to the pharyngeal orifice, to the cartilaginous portion and to the deeper surface of the tube and drum cavity by means of a Weber-Liol catheter or a virgin silver modification; and comes to the conclusion that the eustachian tube is the only channel through which local anesthesia can be best obtained.

Temporary Modified Intubation of the Larynx as an Aid and Safeguard in Operations in the Mouth and Pharynx.—ROYCE (*Brooklyn Med. Journal*, October, 1902) suggests the use of a modified intubation of the larynx in order to obviate dangers and inconveniences attending operations upon the palate, mouth or pharynx. He recommends that a thin, tightly-fitting tube be wedged into the regular laryngeal tube, and having its upper end extended about three-eighths of an inch above the top of the intubation tube. A stiff rubber tube is forced over this end, and when intubation is completed this rubber tube has its free

end protruding from the mouth, all ready for anesthesia. As a consequence the operator is undisturbed by the anesthetist, and blood and refuse material are prevented from entering the respiratory tract.

The Influence of the Radical Mastoid Operation on the Hearing.—EDUARD BUHE (*Archiv fuer Ohrenheilkunde*, 56 Band, Heft 3 and 4).—The author found that out of one hundred and three cases operated upon in Schwartze's clinic, the hearing was improved in thirty-five, no change took place in thirty-seven, and in thirty-one of the cases the hearing was worse after operation. He states that the numerous reports of marked improvements in a large percentage of the cases are not borne out by facts. The following conclusions are noted by Buhe:

(1) Improvement or no change in the hearing takes place in those cases after the radical operation has been performed in which the labyrinth and labyrinth wall are intact, and the whispered voice is not heard at a distance of one meter.

(2) An improvement in the hearing is always noted when there is an interference of the sound waves in the external auditory canal before operation.

(3) Improvement or no change in the hearing is to be expected when the labyrinth or labyrinth wall, or both, are diseased and only a very slight trace of hearing is present before the operation.

(4) The hearing is made worse in nearly all cases in which the whispered voice is heard at a distance of one meter or over, even if the labyrinth is intact.

(5) The hearing is also made worse in those cases in which the labyrinth or labyrinth wall is diseased and the whispered voice is heard at a distance of more than 0.25 meter, but cannot be heard at one meter.

A Case of Nervous Palpitation of the Heart Cured by the Removal of a Spur from the Nasal Septum.—KASSEL (*Archiv fuer Laryngologie und Rhinologie*, 13 Band, Heft 2) reports the case of a man, aged twenty-five, who had been troubled for five months with attacks of palpitation of the heart. The slightest exertion on the part of the patient would bring on an attack; also on getting up in the morning; and at times these attacks came on when the patient was absolutely quiet.

Owing to obstructed nasal respiration an examination of the nose was made, and revealed a marked hypertrophied condition of both lower turbinates and a large spur on the right side of the septum. Touching this spur with a probe would bring on an attack of palpitation. The spur was removed, and since that time there has been no return of the trouble.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

The Genesis and Treatment of the Myopic Eye.—S. D. RISLEY (*Jour. A. M. A.*, November 22, 1902).—The view generally accepted in the early part of the nineteenth century, that the elongated myopic eye was the result of the *physiologic* growth of the hyperopic eye of early childhood, was later found to be untenable in view of the *pathologic* conditions observed—posterior staphylomata, choroidal atrophies, degenerate vitreous and detachment of the retina. Donder's teaching—that the myopic eye is a diseased eye—has been abundantly confirmed in the last half-century.

An improvement in the hygiene of schools, inaugurated as the result of Cohn's observation that the percentage of the disease rapidly increased during the educational process, did not lead to the anticipated reduction in the number of cases of myopia. Moreover, eyes which were found to be myopic at the first examination were found to have increased in degree at later examinations.

Green (1867) suggested that there existed a distinct causal relation between astigmatism and myopia, and Risley, in statistics gathered from Philadelphia schools (1878–1881), was the first to establish the truth of the suggestion. Later, he published a series of cases in which he had observed the transition from hyperopic to myopic astigmatism, without the refraction at any stage becoming emmetropic. The report of the school statistics (1881) brought out the following interesting facts: the emmetropic, and to a less extent the simple hyperopic eye, remained in nearly uniform percentage throughout school-life; enjoyed the highest acuity of vision, and was relatively free from pain and disease. Eyes with hyperopic astigmatism manifested symptoms of asthenopia, and exhibited changes in the fundus similar to those observed in highly myopic eyes. With the decrease in the percentage of eyes with hyperopic astigmatism went a concomitant increase in the percentage of myopic eyes, thus affording an adequate demonstration of the origin of the latter. The starting-point is this congenital anomaly—astigmatism—which, if carefully corrected, is shorn of its power of initiating the myopic process.

Treatment "should be begun before myopia is established." To this end, every child should be subjected to a visual examination at the beginning of school-life. If the disease is already established, Risley recommends the following routine treatment: Rest from near work, steady and persistent use of a mydriatic, protection from light by smoked glasses, internal administration of alteratives. Under this regimen there ensues marked improvement in the uveal tract, with relief of asthenopia. Then, and not before, the refraction should be estimated, both subjectively and objectively.

Faulty binocular balance is very frequent and should be corrected by prisms, or, in certain cases, by tenotomy or advancement. The writer has observed numerous cases where the asthenopia and choroidal disease were rebellious to treatment until the binocular balance was corrected. If the myopia is greater than 4 or 5 D., undercorrecting glasses are given for near work, and if the tendency to progression is marked, for constant wear indoors. In myopia of 12 D. or less the full correction is given for distance. If convergence is weak, the glasses are decentred outward (thus securing the effect of a prism with the base in). If esophoria is present at 6 m., a weaker glass than the actual measure of the myopia enables the patient to read at the remote point of the glass (*i. e.*, without strain upon the accommodation, thus relieving the tendency to undue

convergence). An undercorrection of from 3 to 5 D. is given in myopia of 15 D. or higher.

Under this method of treatment Risley has observed only three cases of retinal separation in patients under treatment. Macular atrophies are comparatively rare. Progression, after the first treatment, is exceptional.

Double Dacryoadenitis with Double Iritis.—Millee and Vidaur (*Le Progres Medical*, October 25, 1902).—The patient was a male, aged forty-two, addicted to alcoholic excesses. Ten days prior to coming under observation he had some difficulty in opening his eyes and discovered a swelling at the upper outer portion of each orbit, near the orbital margin. There was no pain on pressure and no visual disturbance. A week later the right eye became red and painful, the pain running up into the temple, and vision was impaired.

Examination revealed almond-shaped swellings, immobile, situated at the upper outer portion of each orbital rim. In the right eye there was a typical iritis.

The patient was anemic and complained of general weakness. On the anterior surface of the lower third of the arm was a slightly scaly, reddish eruption, consisting of papules grouped in the form of arcs.

Syphilis was regarded as the etiologic factor and mercurial inunctions and potassium iodide exhibited. The patient passed from observation and twelve days later returned with a beginning iritis in the left eye. The right eye showed two elevations on the anterior surface of the iris near the pupillary border, vision being reduced to "fingers at one meter." There was no change in the appearance of the orbital swellings. A more vigorous antisyphilitic treatment resulted finally in the reduction of the tumefactions, the disappearance of the elevations on the surface of the iris and the cure of the scaly eruption on the arm.

The necessity of immediate and active antisyphilitic treatment is emphasized.

Thiosinamin.—G. F. Suker (*Jour. A. M. A.*, August 9, 1902).—Thiosinamin has been investigated by Suker with reference to its use as a therapeutic agent in ophthalmology. Corneal opacities due to an infiltrate or exudate became much less dense, and vision notably improved. The drug, however, had no effect on the opacities due to true scar tissue. Prolonged application of a 10-15 per cent. ointment, together with the internal exhibition of the drug, relieved the tension of the cicatrized tarsus in some cases of entropion to such an extent as to render operation unnecessary. As an adjuvant to mercury and potassium iodide, it has been found of value in hastening the absorption of recent choroidal exudates. Some success has also attended its use in plastic iritis.

The drug is given internally in three-grain capsules once or twice a day, and locally in the form of a ten per cent. ointment, which is applied three times a day. The treatment may be prolonged indefinitely without danger. Results are sometimes only apparent after six months, but when once obtained are permanent.

BOOK REVIEWS.

THE PHYSICIANS' POCKET ACCOUNT BOOK. Consisting of a Manilla-Bound Book of 208 Pages and a Leather Case. By J. J. TAYLOR, M. D. Price, $1.00 complete. Subsequent books to fill the case 40 cents each, or three for $1.00. Published by The Medical Council, Twelfth and Walnut streets, Philadelphia.

This is an excellent example of the single-book system, each account being made in ledger form. It is especially commendable on account of the liberal size of page, allowing plenty of space for entering the various records.

THE PHYSICIANS' PROTECTIVE ACCOUNTANT. Consisting of Ledger, Visiting List, Section for Each Month of the Year, and Leather Case. Price complete, $2.00. The Clinic Publishing Company, Ravenswood Station, Chicago.

This combination outfit consists of a visiting list made in 12 sections, with an excellent leather case and ledger. The arrangement provides for the entry of the name of each patient, description of service rendered and amount of charge in a manner which is strikingly simple but at the same time gives full legal protection. The accounts are transferred from the visiting list to ledger and cash receipts given in place in back of ledger. The system is simple and practical and should be more generally adopted by physicians who usually devote too little attention to the protection of their accounts.

THE MEDICAL NEWS VISITING LIST FOR 1903. Weekly (dated, for 30 patients); Monthly (undated, for 120 patients per month); Perpetual (undated, for 30 patients weekly per year); and Perpetual (undated, for 60 patients weekly per year). The first three styles contain 32 pages of data and 160 pages of blanks. The 60-patient Perpetual consists of 256 pages of blanks. Each style in one wallet-shaped book, with pocket, pencil and rubber. Seal Grain Leather, $1.25. Thumb-letter Index, 25 cents extra. Lea Brothers & Co., Publishers, Philadelphia and New York

A visiting list is a valuable convenience for the active practitioner. Probably the best and most convenient of the many publications of this nature is the *Medical News Visiting List*. *The Medical News Visiting List* is issued in four styles, adapted to any system of records and any method of keeping professional accounts. It is printed on fine, tough paper, suitable for pen or pencil, and durably and handsomely bound in the size of a wallet for the pocket.

DISEASES OF THE RESPIRATORY ORGANS—ACUTE AND CHRONIC. Arranged in two parts. By WILLIAM F. WAUGH, A. M., M. D., Professor of Practice and Clinical Medicine, Illinois Medical College; editor *Alkaloidal Clinic*, etc. Volume of 222 pages. G. P. Englehard & Co., Chicago. Cloth, $1.00.

The author's expressed object in preparing this volume was his belief that the treatment of acute affections of the respiratory organs deserve more special attention than is accorded by the text-books on practice. The volume is arranged in thirty-seven parts, each disease of the respiratory organs being considered in a separate chapter, the latter being systematically divided into (1) Definition of the Disease, (2) Etiology, (3) Symptoms, (4) Diagnosis, (5) Prognosis,

and (6) Treatment. The general arrangement of the book, the typography and general handling of the subject-matter reflets credit on the author and publisher.

MANUAL OF GYNECOLOGY. By HENRY T. BYFORD, M. D., Professor of Gynecology and Clinical Gynecology in the College of Physicians and Surgeons in Chicago; Professor of Gynecology in the Post-Graduate Medical School of Chicago and in the Chicago Clinical School, etc., etc. Third revised edition, containing 363 illustrations. Philadelphia: P. Blakiston's Son & Co. 1902. Price, $3.00 net.

It has been the endeavor of the author of this book to supply the student with a manual of gynecology complete enough for study or reference in his college course, as well as a guide to him during his first years of practice. This volume will, however, be found also desirable for the busy general practitioner who does but a small amount of gynecological surgery. In this third edition the contents of the book have been recast and much new matter added. It is in its present shape a concise, but at the same time complete expose of the principles of modern gynecology, and one of the best manuals that has ever been presented to the student.

THE PHYSICIANS' VISITING LIST (LINDSAY & BLAKISTON). For 1903. Philadelphia: P. Blakiston's Son & Co. Price, $1.00.

The visiting list has just appeared in its fifty-second edition, a fact which conclusively proves the superiority of this booklet. It certainly represents in its arrangement perfection of efficiency and convenience for the practitioner.

AMERICAN EDITION OF NOTHNAGEL'S PRACTICE OF DIPHTHERIA. By WILLIAM P. NORTHRUP, M. D. Measles, Scarlatina, German Measles, by THEODOR VON JURGENSEN, M. D. Edited with Additions by WILLIAM P. NORTHRUP, M. D. Authorized Translation from the German under the Editorial Supervision of ALFRED STENGEL, M. D. Price, $5.00. W. B. Saunders & Co., Philadelphia and London. 1902.

This is the only volume in the "Nothnagel Series" containing an article by an American writer. The article on diphtheria in the original work is being translated and issued apart from the series by special arrangement. A careful perusal of both articles shows that the substitution has entailed no loss. It presents an exhaustive study of the disease in all its phases; its history, pathology, symptomatology and treatment are dealt with in detail. The various methods of treatment are carefully described and illustrated, especially intubation and tracheotomy.

The serum treatment is highly commended, and statistics are presented showing the great value of its prompt application.

The acute exanthemata, measles, scarlatina and German measles, are discussed by von Jurgensen. These subjects are dealt with exhaustively, especially with reference to their pathology and differential diagnosis. In the introduction acute exanthemata in general are discussed, following which is a detailed description of each.

DIE BEDEUTUNG DER NEURONLEHRE FUER DIE ALLGEMEINE NERVEN-PHYSIOLOGIE. By PROFESSOR F. SCHENCK. Marburg, 1902. Wurzburger Abhandlungen aus dem Gesammtgebiet der Praktischen Medicin. A. Stuber's Verlag, Wurzburg.

This is a careful consideration of the neuron theory from the point of view of a physiologist, and especially from the standpoint of cell-function as opposed to cell-anatomy. Bethe and Apathy's work is discussed, and the effect of their discoveries upon our previous conception of nerve endings and nerve connections is treated with great insight. The main conclusions underlying the author's point of view are: First, that in most cases no physiological conclusion can be drawn merely from the anatomical structure of an organism; and second, that the cell plays no part at all in many physiological processes. This monograph can be earnestly recommended to those whose interest in neurology extends beyond the mere clinical aspect of the subject. A good bibliography adds to the value of the paper.

ESSENTIALS OF DISEASES OF THE EAR. By E. B. GLEASON, S. B., M. D., Clinical Professor of Otology, Medico-Chirurgical College, Philadelphia; Surgeon in Charge of the Nose, Throat and Ear Department of the Northern Dispensary, Philadelphia, etc. Third edition, thoroughly revised. 16mo. volume of 214 pages, with 114 illustrations. Philadelphia and London: W. B. Saunders & Co. 1902. Cloth, $1.00, net.

This little compend contains as much information as many text-books on the same subject. The illustrations are numerous and fairly well executed. Nothing seems to have been left out to make it complete, and it fully meets the requirements of the students in their dispensary work. It is, indeed, a very commendable little work.

A TEXT-BOOK OF DISEASES OF THE EAR. For Students and Practitioners. By DR. ADAM POLITZER, Imperial-Royal Professor of Aural Therapeutics in the University of Vienna. Translated and edited by MILTON J. BALLIN, Ph. B., M. D., and CLARENCE L. HELLER, M. D. New (4th) edition, revised and enlarged. In one octavo volume of 896 pages with 346 original illustrations. Cloth, $7.50, net. Lea Brothers & Co., Publishers, Philadelphia and New York. 1902.

The medical world is too familiar with Professor Politzer's work to require words of recommendation. Ever since the appearance of the first edition it has been conceded to be the best work published on this special subject. The former editions were all revised in a careful manner, fully keeping pace with the epoch-making advances in otology. Two of the previous editions were translated into English. In the present revision so many changes and additions have been made that in order to form any idea of the advances noted by Professor Politzer during the past eight years, much time and careful study will be required. The chapters on aural surgery and intracranial complications are carefully discussed and deserve special mention. To the indications and limitations of the various surgical procedures much space is devoted; many practical illustrations are also given. The translators have added an appendix in which they give the prescriptions commonly used at Professor Politzer's clinic. The author's letter to the translators, in which he sounds their praises in most glowing terms, we hardly consider in keeping with the dignity that this work demands.

A TEXT-BOOK OF THE ART AND SCIENCE OF OBSTETRICS. By HENRY J. GARRIGUES, A. M., M. D., Consulting Obstetric Surgeon to the New York Maternity Hospital; Gynecologist to St. Mark's Hospital, etc., etc. With 504 illustrations. Philadelphia and London: J. B. Lippincott Company. 1902.

The author, whose "Diseases of Women" ranks among the best text-books of gynecology, gives us in this volume a new text-book on obstetrics. He is

careful to adapt it to the needs of the student. Cumbersome references to the literature, presentation of numberless theories of still unsettled problems and alike are omitted. The author presents his personal views—the word "I" is conspicuously prevalent. These views are interesting, they are sound and clear, because they are based upon a wide practical experience in the field of obstetrics.

The arrangement of the material is happy. He leads the reader gradually from the simple to the complicated, from the easy to the difficult. The volume is divided into a "normal" and an "abnormal" division. Each of these is subdivided into several parts, which in their turn consist of numerous chapters. A very strict adherence to this scheme of division furnishes a few strange peculiarities of the book. It leads to a few chapters, with special titles, which do not contain more than four lines of text (*e. g.*, Chapter XI, Respiration); it necessitates at times the unification of some very distantly related subjects. Thus Chapter "Hemorrhage" deals with placenta previa and hematoma of the vulva, Chapter "Rupture of Organs" with rupture of the uterus, laceration of vulva and perineum, and rupture of the spleen, heart, blood vessels or psoas muscle.

In some few instances the author's views cannot be accepted. He considers (page 102) the observation of uterine contractions an absolute proof of an existing pregnancy. We think that contractions have frequently been described in uterine myomata, of late even in ovarian cysts. On page 202 the normal alkalinity of the vaginal secretion is mentioned. The normal vaginal discharge of pregnant women has been found to be acid. In speaking of the use of cesarean section in the treatment of placenta previa the author seems to qualify the extirpation of the uterus in case of uncontrollable hemorrhage after the expulsion of the fetus as Porro's operation.

While using Peters' well-known illustration of the implantation of the ovum, the author strangely gives in the text not Peters', but the older theory of nidation.

The work is lavishly illustrated. Most of the pictures are taken from nature and are very instructive. We would, however, strongly plead for an omission of the two ugly plates illustrating breasts in pregnant and unimpregnated women, and for their replacement by more artistic products.

We trust that the next edition will eliminate a few errors in the alphabetical arrangement of the subjects in the index and will bring a more uniform orthography by avoiding the simultaneous use of the spelling "hæmatoma" and "hemorrhagia," or "fœtus" and "fetation."

It is needless to say that such trifling defects, almost unavoidable in first editions, cannot materially detract from the real merits of this book, which presents facts of practical significance in an exceedingly clear and instructive form.

A Hand-Book of Appendicitis. By A. J. Ochsner, M. D., Professor of Clinical Surgery, College of Physicians and Surgeons, Medical Department of the University of Illinois; Surgeon to the Augustana Hospital, etc. Pages 182. Illustrated. Bound in red cloth. Price, $1.00, net. G. P. Engelhard & Co., Chicago. 1902.

In appearance the little work under discussion could hardly be excelled, with its uncut edge and gilt top. The work embodies the now well-known Ochsner ideas on this disease, but amplifies the subject-matter as it appeared in the *Medical Standard*. The author's idea of placing the intestinal tract at rest in an acute attack by the use of gastric lavage and rectal feeding is recognized as a good one. His plan for opening and closing the abdomen where it is found that the McBurney incision does not afford enough room is known to the reviewer by experience to be extremely useful. These and much more are well treated in this little book.

A Pictorial System of Instruction in X-Ray Methods of Photo-Therapy, Hot-Air, Vibration and High-Frequency Currents. By S. H. Morell, M. D. E. R. Pelton, New York. Price, $15.00.

It is not infrequent to observe the zeal of an enthusiast carrying its victim to an amusing extreme, and, in his search for means of relief outside of the physician's ordinary armamentarium, the author has been led into strange fields. His first detail is of the X-ray and its management, and this department is full of much good practical advice, but there is much that need not have been said. The author's ingenuity is shown in several devices he has arranged, and he has collected many references to the uses and results of X-ray, which, while not always reliable, make the book interesting. The illustrations of the Roentgen ray division are very admirable, and make a good study of most normal and abnormal conditions. The therapeutic side of this light is thoroughly dwelt upon, and some rather extravagant claims are made. More than half of the book is devoted to the X-ray and is, on the whole, very interesting and instructive.

Much space is given to the apparatus and uses of Photo-therapy, Hot-air Therapy, Vibration Therapy, and High-frequency Medical Electric Currents, and the book seems to have touched upon all new "adjuncts" to materia medica and surgery.

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